iWay

iWay Server Installation
Version 5 Release 2.0

DN3501022.0103

Preface

This documentation describes how to install the iWay Server Version 5 Release 2.0 software. It is intended for system administrators and others who are responsible for installing the software and general machine administration for user ID setup and run time security.

How This Manual Is Organized

This manual includes the following chapters:

Chapter		Contents
1	Introduction to Server Installation	Lists the necessary terminology and prerequisites for general sever installation.
2	Server Installation Guide for Windows NT/2000	Describes the installation requirements and the step-by-step instructions for a Windows NT/2000 installation.
3	Server Installation for UNIX	Describes the installation requirements and the step-by-step instructions for a UNIX installation. This includes all UNIX platforms such as HP-UX, AIX®, Solaris™, and Linux®.
4	Server Installation for OS/390 and z/OS	Describes the installation requirements and the step-by-step instructions for an OS/390 and z/OS installation.
5	Server Installation for MVS	Describes the installation requirements and the step-by-step instructions for an MVS installation.
6	Server Installation for OS/400	Describes the installation requirements and the step-by-step instructions for an OS/400 installation.
7	Server Installation for OpenVMS	Describes the installation requirements and the step-by-step instructions for an OpenVMS installation.
8	Server Installation for VM	Describes the installation requirements and the step-by-step instructions for a VM installation.

Documentation Conventions

The following conventions apply throughout this manual:

Convention	Description
`THIS TYPEFACE` or `this typeface`	Denotes syntax that you must enter exactly as shown.
`this typeface`	Represents a placeholder (or variable) in syntax for a value that you or the system must supply.
underscore	Indicates a default setting.
this typeface	Represents a placeholder (or variable) in a text paragraph, a cross-reference, or an important term. It may also indicate a button, menu item, or dialog box option you can click or select.
this typeface	Highlights a file name or command in a text paragraph that must be lowercase.
Key + Key	Indicates keys that you must press simultaneously.
{ }	Indicates two or three choices; type one of them, not the braces.
[ ]	Indicates a group of optional parameters. None are required, but you may select one of them. Type only the parameter in the brackets, not the brackets.
|	Separates mutually exclusive choices in syntax. Type one of them, not the symbol.
. . .	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis points (…).
. . .	Indicates that there are (or could be) intervening or additional commands.

Related Publications

To view a current listing of our publications and to place an order, visit our World Wide Web site, http://www.iwaysoftware.com. You can also contact the Publications Order Department at (800) 969-4636.

Customer Support

Do you have questions about the iWay Server Installation?

Call Information Builders Customer Support Service (CSS) at (800) 736-6130 or (212) 736-6130. Customer Support Consultants are available Monday through Friday between 8:00 a.m. and 8:00 p.m. EST to address all your iWay Server Installation questions. Information Builders consultants can also give you general guidance regarding product capabilities and documentation. Please be ready to provide your six-digit site code (*xxxx.xx*) when you call.

You can also access support services electronically, 24 hours a day, with InfoResponse Online. InfoResponse Online is accessible through our World Wide Web site, http://www.informationbuilders.com. It connects you to the tracking system and known-problem database at the Information Builders support center. Registered users can open, update, and view the status of cases in the tracking system and read descriptions of reported software issues. New users can register immediately for this service. The technical support section of www.informationbuilders.com also provides usage techniques, diagnostic tips, and answers to frequently asked questions.

To learn about the full range of available support services, ask your Information Builders representative about InfoResponse Online, or call (800) 969-INFO.

Information You Should Have

To help our consultants answer your questions most effectively, be ready to provide the following information when you call:

- Your six-digit site code (*xxxx.xx*).
- Your iWay Software configuration:
  - The iWay Software version and release.
  - The communications protocol (for example, TCP/IP or LU6.2), including vendor and release.
- The stored procedure (preferably with line numbers) or SQL statements being used in server access.
- The database server release level.
- The database name and release level.
- The Master File and Access File.

- The exact nature of the problem:
  - Are the results or the format incorrect? Are the text or calculations missing or misplaced?
  - The error message and return code, if applicable.
  - Is this related to any other problem?
- Has the procedure or query ever worked in its present form? Has it been changed recently? How often does the problem occur?
- What release of the operating system are you using? Has it, your security system, communications protocol, or front-end software changed?
- Is this problem reproducible? If so, how?
- Have you tried to reproduce your problem in the simplest form possible? For example, if you are having problems joining two data sources, have you tried executing a query containing just the code to access the data source?
- Do you have a trace file?
- How is the problem affecting your business? Is it halting development or production? Do you just have questions about functionality or documentation?

User Feedback

In an effort to produce effective documentation, the Documentation Services staff welcomes your opinions regarding this manual. Please use the Reader Comments form at the end of this manual to relay suggestions for improving the publication or to alert us to corrections. You can also use the Documentation Feedback form on our Web site, http://www.iwaysoftware.com.

Thank you, in advance, for your comments.

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Interested in technical assistance for your implementation? Our Professional Services department provides expert design, systems architecture, implementation, and project management services for all your business integration projects. For information, visit our World Wide Web site (http://www.iwaysoftware.com).

Contents

CHAPTER 1

Introduction to Server Installation

Topics:

- Terminology
- Installation Requirements

This documentation covers the requirements necessary for installation, configuration and general use of the server software on a given platform. The installation process, while not exactly the same on all platforms, has many steps and concepts in common. Each platform-related section is organized by issues and steps in the order in which they would occur during the installation process.

The steps in the following chapters for the Windows NT®/2000, UNIX®, OS/390 and z/OS™, OpenVMS™, or OS/400® platforms will result in the installation of the software plus a basic configuration with no configured data adapters.

Installation on MVS® and VM does not produce a basic configuration. Specific configuration of the data adapters, including basic configuration, is covered in the Server Administration manuals for each platform.

Terminology

To eliminate the repetitive listing of individual platform names and terms that may be particularly long and sometimes confusing, the following terms and generalities will be used.

- UNIX refers to any UNIX or Linux implementation (for example, Solaris, Tru64™, AIX, Red Hat™, and others). Linux is a generic open source implementation of UNIX, but a particular Linux release has specific implementations by specific vendors (or groups) for specific hardware platforms. Therefore, compiled software for a given Linux operating system level may be interchangeable between Intel releases; it does not mean that compiled software may be directly used on any hardware implementation with a different chipset.
- Windows NT/2000 refers to any supported MS/Windows NT 4.0 with Service Pack 5 or higher or 2000 Server environment. Servers are not supported on Windows NT 3.x and Windows workstation releases (for example, 95, 98, ME, 2000 Professional and XP Professional). However, connectors are supported in these environments.
- MVS or Traditional MVS refers to the implementation model for MVS that uses JCL, PDSs, and Load Libraries that run as started tasks.
- USS refers to an the OS/390 and z/OS implementation model uses the UNIX System Services (USS) as a run time shell and file system to store and run applications. The actual implementation of the product can access traditional OS/390 and z/OS application PDS files and data sets. There is also JCL in this implementation, but it is used for installation purposes and as a shell to start, control, and stop the USS implementation. The USS implementation is more like a UNIX release in terms of the way processes run and the features.
- OS/400 refers to an AS/400 machine running OS/400. The AS/400 is also known as IBM's iSeries of machines. Generally, the terms AS/400 and OS/400 can be used interchangeably, but AS/400 is the hardware and OS/400 is the operating system. The distinction only recently became important because other operating systems are now available on AS/400 hardware. The OS/400 implementation is a mix of traditional OS/400 program libraries. Use of the QSH (UNIX) shell and file system (IFS) plus traditional OS/400 application libraries are also accessible. Only RISC processor hardware is supported. The older CISC machines are not supported.
- OpenVMS refers to Compaq's OpenVMS operating system. Some people also refer to OpenVMS as VMS™; the terms are interchangeable. OpenVMS was originally from Digital Equipment Company (DEC), which later merged with Compaq. It is not uncommon to hear the original company name in reference to this platform. Only Alpha processor hardware is supported, the older VAX machines are not supported.

- VM refers to IBM's VM/CMS. While UNIX Systems Services do exist under VM, only the traditional VM model is supported.
- A connector refers to client side products and/or actual applications that talk to a server for some purpose.
- A server refers to the server environment that connects requests with application agents to service the requests. The server environment is a number of processes that provide management, logging, and application processing. The environment is generally configured with data adapters that allow the application agents to access data sources such as Oracle®, DB2®, SQL Server, and other remote servers acting as subservers.
- A server or data adapter refers to the ability of an application agent to access an external data source such as Oracle, DB2, Essbase, SQL Server, and other remote servers acting as subservers. Adapter configuration is part of the general configuration of the server environment and is not specific to individual application agents. The actual data adapters available will vary by platform. Specifics are detailed in the *Server Administration* manual.

Installation Requirements

Review the documented installation process before starting. Checking the steps beforehand will allow the installation to go smoothly. In some cases, the information provided in this manual might need to be disseminated among several administrators if job functions, such as software loading and ID creation, are performed by several people.

CHAPTER 2

Server Installation Guide for Windows NT/2000

Topics:

- Installation Requirements
- Installing the Server
- Verifying the Server Installation
- Uninstalling the Server
- Troubleshooting Safe Mode

These topics describe the requirements and procedures for proper installation of the Server for Windows NT/2000.

Installation Requirements

Before beginning server installation, review the following requirements:

- Supported Hardware and Software
- Disk Space Requirements
- Memory Usage
- Communications Requirements
- Installation User ID Requirements

Supported Hardware and Software

The following hardware and software have been tested with the Server.

Hardware	Software Operating System Release
Intel (Pentium class or higher) PC	Microsoft Windows NT Version 4.0, with Service Pack 6a applied.
	Microsoft Windows 2000 Server.
	Microsoft Internet Explorer 5.5 or higher is required for the Web Console
Note: Particular database vendors may have specific minimum service pack requirements.	

Installing an iWay Server on a Primary Domain Controller is not recommended.

Disk Space Requirements

The following are disk space requirements for all servers.

Server Type	During Install	After Install
All Server Types	2 megabytes	70 megabytes

Memory Usage

Memory usage depends on the following elements:

- Number of data access agents.
- Type of access that is performed: joins, large retrieval, etc.
- Connection queue.

The following table shows the memory requirements for installation and operation of the server. Usage numbers provided apply when the server is in an idle state, so they can fluctuate slightly.

Server Type	Workspace Memory	Memory per Active Agent
Full Function Server	12 megabytes	10 megabytes

Communications Requirements

The following communications protocols are compatible with the server.

Communications Protocol	Requirements
SNA (LU6.2)	Inbound or outbound: Microsoft SNA Server Version 4.0 with Service Pack 3 (for Microsoft Windows NT, Version 4.0 only), Microsoft Integration Server 2000 (Windows 2000 only), IBM's eNetwork Communications Server Version 6.0 or higher (6.1 or higher on Windows 2000) must be installed and configured.
TCP/IP	Microsoft TCP/IP for Windows NT must be installed and configured. **Note:** Up to 4 consecutive open ports for each server you want to run will be used. The starting port number (of the consecutive ports) is required during the installation process.

Installation User ID Requirements

An ID is required in order to install and administer the server; this is also known as the "iadmin ID". This ID must have local administrator rights during installation in order for the product to be properly installed. The ID that is logged into the computer will be the ID used as the server administrator during installation. This ID can be changed after the installation is complete. The installation program will attempt to add a service to the NT server. If the ID used during installation does not have adequate authority, that service cannot be created. Local administrator permission is only required during installation, and can be removed after installation is complete.

If the ID being used does not have a password, the server will start in Safe Mode, and not all functionality will be available. See *Troubleshooting Safe Mode* on page 2-14 for details on how to fix this problem.

Installing the Server

Installation is performed by the setup program, which yields a basic configuration. After installation, the administrator can start both the server and a browser against the server's HTTP listener. This allows the administrator to complete the configuration (typically for DBMS and outbound communications nodes) using the Web Console.

Procedure How to Install and Configure the Server

Note: You should exit all programs before continuing.

1. Insert the server installation CD into your CD-ROM drive.
2. If the Windows Autorun feature is active, the installation setup program will start automatically. If not, at the command prompt or using the Start Menu Run feature, type the following:

   ```
   drive:setup
   ```

   where:

   drive:

   Is the letter of the drive where you placed the installation CD.

   The Choose Setup Language window opens.
3. From the drop-down menu, select the language to be used during installation.
4. Click *OK* to continue or *Cancel* to stop the installation procedure.

   If a prior installation exists, a question will appear asking if you would like to refresh the installation.
5. Click *Yes* to replace the current installation. When the replace is finished you can start the server. See *Verifying the Server Installation* on page 2-13.

   or

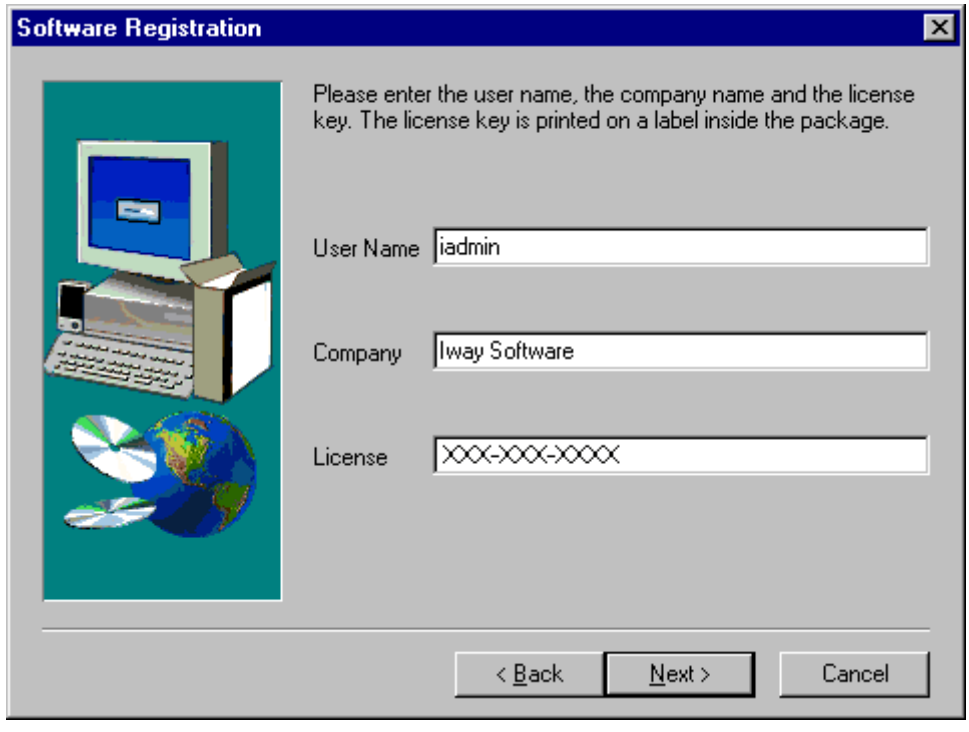
   Click *No* to continue with installation.

   The Software License Agreement window opens.
6. Click *Yes* to accept the terms of the agreement and continue installing the server.

   or

   Click *No* to reject the software license agreement and exit the Setup program.

The Software Registration window opens:



7. In the Software Registration window, enter the user name, company name, and the License Key.

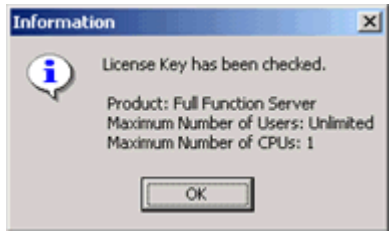
Important: You must provide the three-part License Key information in the space provided in the Software Registration window. The License Key is printed on a form that is included with the software and should be saved for future reference.

The License Key determines which product you are installing, such as a Full-Function Server or a WebFOCUS Reporting Server, and will change some of the defaults that occur on some of the screens. An example of this is the folder name for the product.

- If you enter an invalid License Key, the Setup program displays a warning.

  Click *OK* to correct the key.

- If the License Key is correct, the Registration Confirmation window opens:

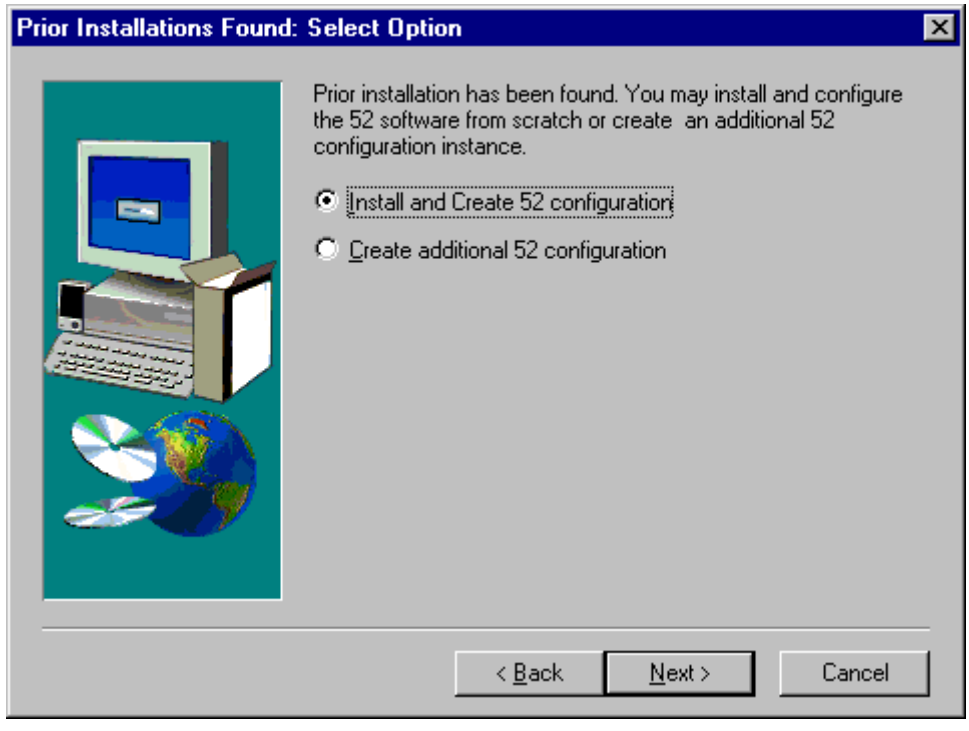


8. Click *OK* to continue.

The next window will vary, depending on whether there is an existing 52 Server installed on the machine.

- On a machine that has never had a server installed, the installation script will directly jump to the Select Program Folder window. Proceed to step 11.

- On a machine where a Version 52 Server has been installed, the Prior Installations Found: Select Option window displays:



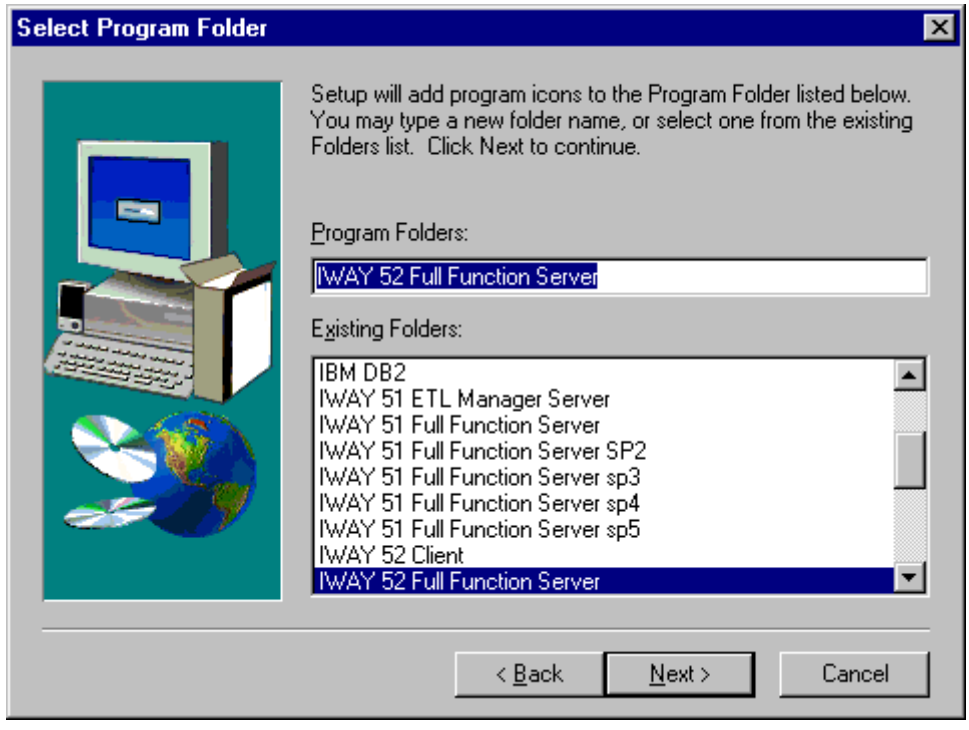
9. In the Prior Installations Found: Select Option window, choose one option:

- **Install and Create 52 Configuration.** This option creates the software installation directory (EDAHOME) and an original configuration directory (EDACONF) to go with the installation directory. A new folder/directory may be picked or an existing one over-written.
- **Create additional 52 configuration.** This option allows you to create a new configuration.

Important: The original configuration can only be reconfigured manually or through HTTP Web Console options. If you replace a prior configuration, the Server Setup program creates a backup of your original configuration in the BACKUP directory.

10. Click *Next*.

The Select Program Folder window opens:



11. Select the name of the server folder.

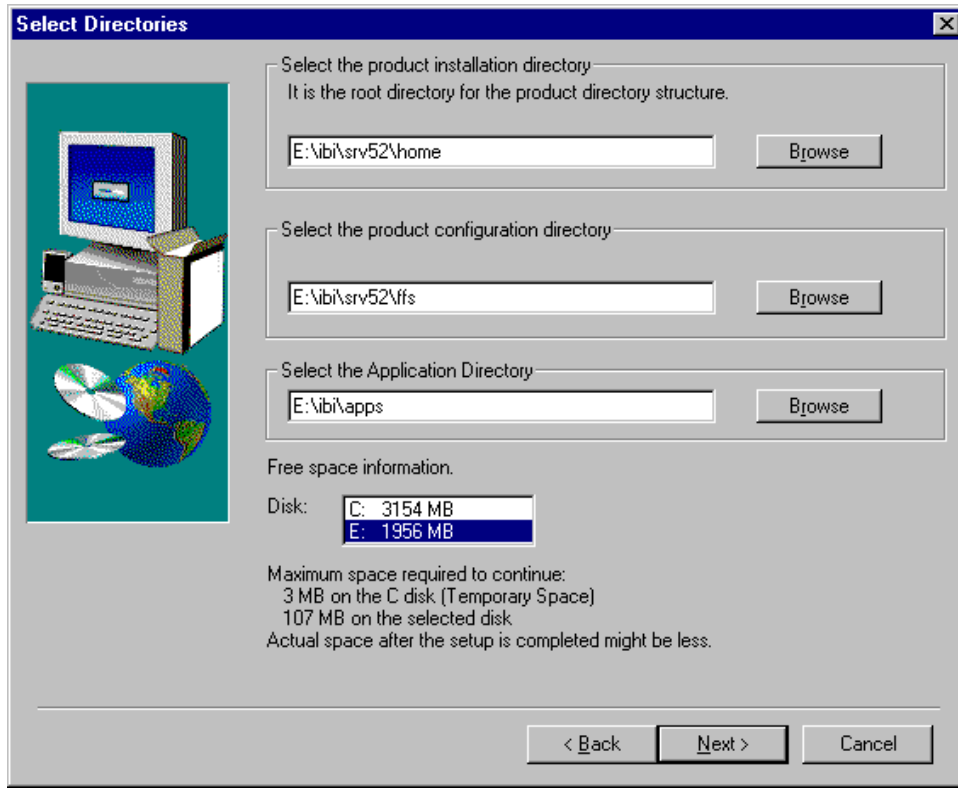
The name defaults based upon the server type being installed, but it can have a suffix (for example, 001) to configure additional servers. In all cases, the name must be unique. The setup program adds this new folder to the Startup menu.

Important: If you choose an existing Server folder from the scroll box, a message will appear saying that folder is currently in use. A suffix will need to be added to the folder name.

12. Click *Next*.

This set of windows will vary, depending on whether pre-existing servers were found and which server was selected.

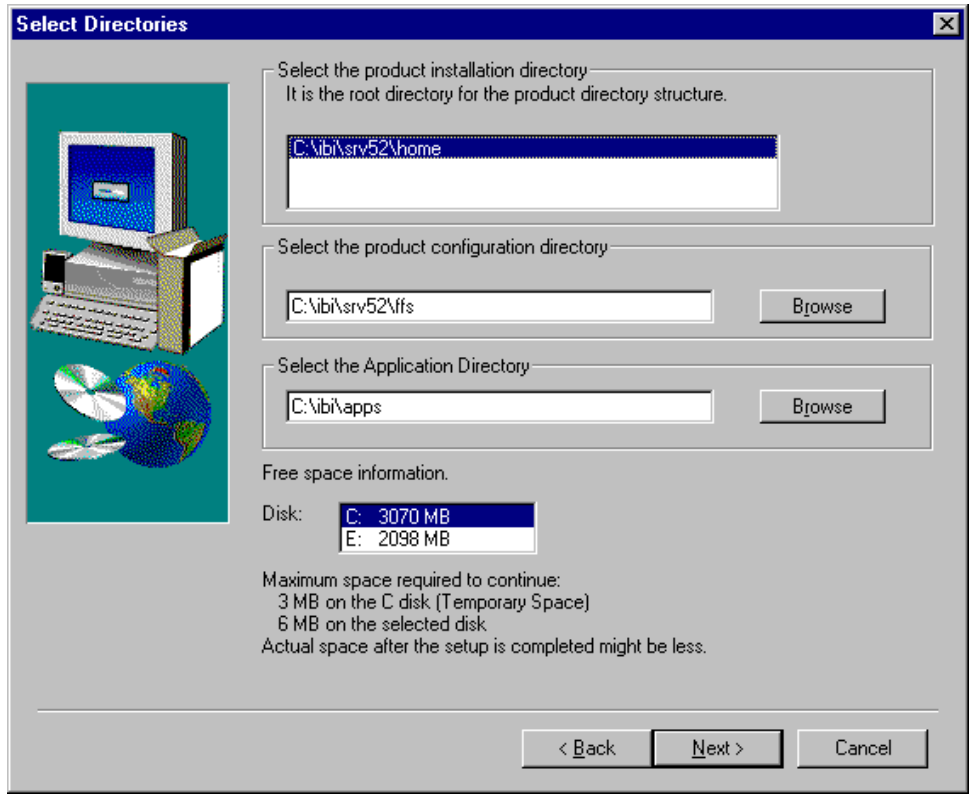
- If no pre-existing servers were found, or Install and Create 52 Configuration was selected, then the Select Directories window opens:



Enter the names of the directories where you want to install and configure the server, and from where you want to find and read applications. Click *Next* to proceed step 13, the Configure Server Administrator ID/Password and Inbound Communications window.

Note: You can include spaces in the directory name; however, the Setup program does not include them when it creates the directory.

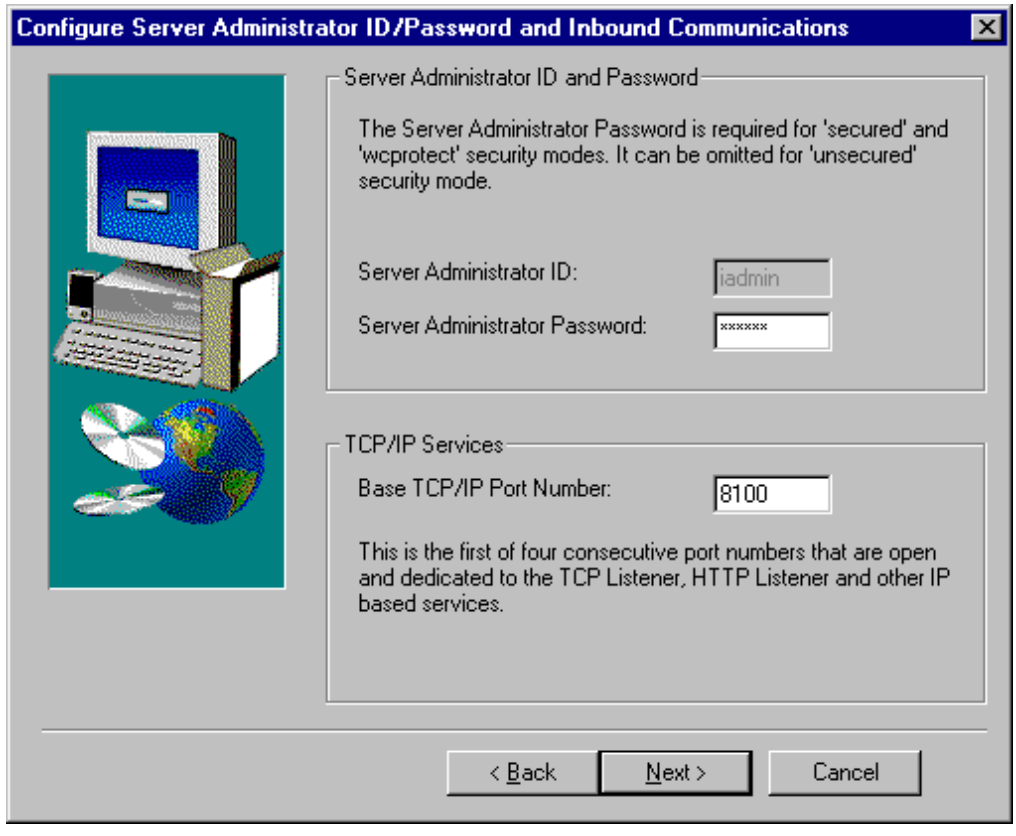
- If a pre-existing server was found and you chose to create an additional configuration, a different Select Directories window opens:



You must choose an existing EDAHOME directory, and enter the directory where you want to store the new EDACONF. If you have more than one version installed, the Select Directories window shows a list of existing EDAHOME directories. Select the EDAHOME directory you want to use for configuration, and enter the directory where you want to store the configuration.

Click *Next* to proceed step 13, the Configure Server Administrator ID/Password and Inbound Communications window.

13. In the Configure Server Administrator ID/Password and Inbound Communications window, supply the information requested:



- **Server Password.** Enter the password for ID of the person logged into the computer on which the installation is being performed. Both the ID and password can be changed after the installation using the Web Console. If the password is incorrect, the server will start in safe mode. See *Troubleshooting Safe Mode* on page 2-14 for more information.
- **TCP/IP Services.** Type the Base TCP/IP Port Number or the service name representing the port number that the server is using for TCP/IP. The server needs four consecutive ports for internal and external communications. The default varies by product to support multiple servers on a particular machine.

  For a Full Function Server, the default is 8100, which reserves ports 8100-8103.

  For a WebFOCUS Reporting Server, the default is 8120, which reserves ports 8120-8123.

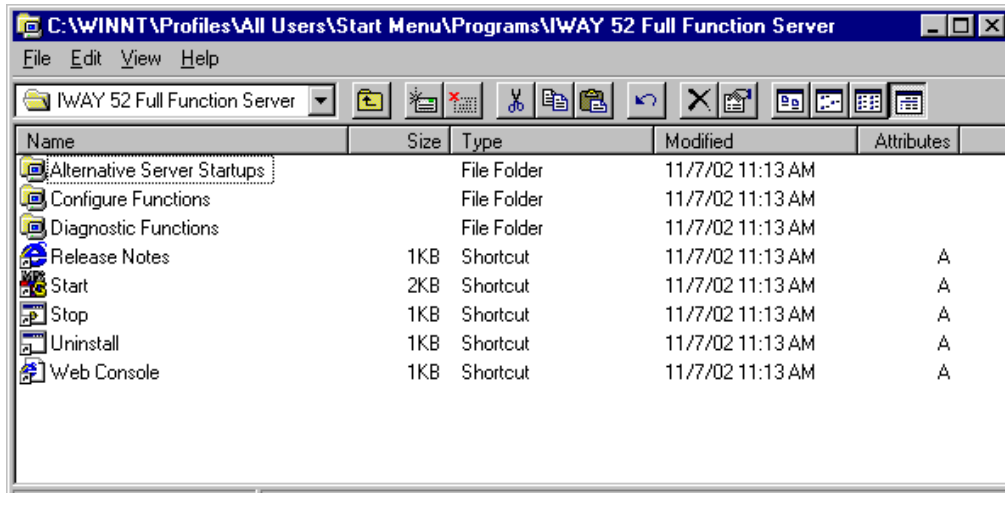
For ETL, the default is 8116, which reserves ports 8116-8119.

Note: The HTTP port number is always one greater than the TCP/IP port number. For example; if the TCP/IP port number is 8100, the HTTP port number will be 8101.

14. Click *Next* to proceed to the Demo files installation.

15. In the Demo files installation screen, select the language in which the Demo files should be installed. If no language is selected, the installation continues but the Demo files are not installed. These files are not required for the operation of the Server.

16. Click *Next*. The Setup program installs software and configures the server using the information you specified. A resource meter and copy messages will appear during this step. The Setup program creates a server program group to receive the program icons for the product. The actual name will be based upon the server product that was installed.



17. Click *Finish* to exit the Server Setup Program.

Note: After running the Setup program, if you need to modify the configuration or configure DBMS support, you may do this using the Web Console. For more information, see the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.

You are now ready to verify your installation.

Verifying the Server Installation

After you have completed your configuration, your server should be started, and the Console displayed.

If not, you can manually start the server by selecting the Workspace Start icon in the folder group specified during installation, and then selecting the Workspace Web Console icon from the folder group. See the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual for more information about operating the server.

Procedure How to Use the Web Console to Test the Server

After installation, the server will start and the Web Console will be displayed. The Home Page of the Web Console contains links for the various features it supports. Click Test Basic Server Functionality to test the installation. A sample report is executed and a new window will display the results.

Detailed use of the HTTP Web Console for configuration or general operation of the server is available as a drill-down on the Web Console Menu, and in the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.

Procedure How to Install the Debuggable Version

As with any complex software product, there is sometimes a need to produce traces and other information in order to identify problems. To address this issue, the product is shipped with a debuggable version. To install the debuggable version, the CD must be in its original install location.

Note: The Debuggable Version should not be installed and activated unless explicitly requested by customer support for problem resolution.

1. From the Start menu, select *Programs*.
2. Select *iWay Servertype*.
3. Select *Diagnostic Functions*.
4. Select *Install Debuggable Version*.

Uninstalling the Server

Access the uninstall program by clicking the Uninstall icon on the Startup menu. This program removes the EDAHOME and EDACONF directories of this server instance.

If you have more than one configuration using the same EDAHOME directory, the additional configurations contain unconfigure icons instead of uninstall icons. If you want to uninstall your initial configuration, you must unconfigure the additional configurations first. If you do not unconfigure these instances before uninstalling the EDAHOME directory, you disable the additional configurations, including their unconfigure utilities. A manual cleanup is then required.

Troubleshooting Safe Mode

If the Server starts in safe mode normal use of the server is disabled. However the administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the HOME page. Click the fix hyperlink listed under the problem and make the correction. Save and restart the server. A common reason for the server to start in safe mode is that the server_admin_password is not correct.

CHAPTER 3

Server Installation for UNIX

Topics:

- Installation Requirements
- Installing the Server
- Verifying the Server Installation
- Configuring the Server with Different Security Modes
- General Server Startup and Use
- Troubleshooting Safe Mode

These topics describe the requirements and procedures for proper installation of the Server for UNIX.

Installation Requirements

Before beginning server installation, review the following requirements:

- Supported Platforms and Operating Systems
- Disk Space Requirements
- Memory Usage
- Communications Requirements
- Installation User ID Requirements

Supported Platforms and Operating Systems

The following table lists supported platforms and operating system releases. Confirm that the platform and the intended operating system releases are supported combinations on the chart, and that the label on the actual media identifies the correct software.

Important: The CD label displays the platform and operating system release on which the software was built. The software will run on the designated or higher release. However, DBMS support must be taken into consideration when selecting software. Please consult your local branch if you have any questions.

Operating System Release and CD Label
Compaq Tru64 V4.0D
Compaq Tru64 V5.0A
HP-UX 11 (32 Bit)
HP-UX 11 (64 Bit)
IBM AIX 4.2.1
IBM AIX 4.3.3
IBM AIX 4.3.3 (64 Bit)
NCR MP-RAS 3.02
RedHat Linux 6.2 (2.2.14 Kernel) for Intel
RedHat Linux 7.2 (2.4.7 Kernel) for Intel
Sequent Dynix/ptx 4.5.1
Siemens Reliant 5.45

Operating System Release and CD Label
SUN Solaris 2.6
SUN Solaris 7
SUN Solaris 8

Note:

- Bull Escala - Use software for IBM AIX
- Siemens-Fujitsu PRIMEPOWER - Use software for SUN Solaris

The software also supports a range of data adapters for Adabas/C, DB2 UDB, C-ISAM (Informix), Essbase, Informix (SDK), Ingres II, Oracle, Progress, Red Brick, Sybase (ASE and IQ), Teradata, Nucleus and UniVerse; see the DBMS support chart for specific combinations on any given platform. Specific DBMS information (such as release levels, user IDs, and passwords) is not used during basic installation, but will be used later during configuration.

Disk Space Requirements

The following are approximate disk space requirements. Specific sizes may vary slightly with options selected during configuration. The usage numbers do not include space for actual applications, databases, sort space, output preparation, or logs.

Platform	Version	After Install
HP HP-UX	11 (32Bit)	122 megabytes
IBM AIX	4.2.1	37 megabytes
Sun Solaris	2.6 (32-bit)	120 megabytes

Memory Usage

Memory and shared memory usage depends on the following elements:

- Number of data access agents.
- Type of access performed: joins, large retrieval, etc.
- Connection queue.

Actual memory usage differs between the various UNIX implementations and the server load. The following table shows the shared memory usage for installation and operation of the server.

Platform	Workspace Memory	Memory Per Agent	Listener Memory
HP HP-UX 11 (32bit)	.7 Megabytes	1.7 Megabytes	Any .7 Megabytes
IBM AIX 4.2.1	1 Megabyte	2.2 Megabytes	Any .6 Megabytes
Sun Solaris 2.6 (32bit)	2 Megabytes	18 Megabytes	Any 5 Megabytes

Communications Requirements

The TCP/IP Transport protocol is supported on all platforms and is the primary method of communications between iWay-enabled connector applications and iWay servers. The SNA (LU6.2) protocol is also supported on a limited set of platforms. The following topics describe specific protocol requirements.

Communications Protocol	Requirements
TCP/IP	Up to 4 consecutive open ports for each server you want to run will be used. Since an initial installation also yields an initial configuration, a set of port numbers must be available at install time.
SNA (LU6.2)	The System Administrator should confirm that: • The System Network Architecture (SNA) software is configured on both target nodes in the network. • An SNA configuration for intra-node communications exists. This is required in order to directly test the configuration locally. For information on supported versions of SNA software, see *Software Release Requirements for SNA (LU6.2)* on page 3-5.

Reference Software Release Requirements for SNA (LU6.2)

The following software releases are supported for SNA (LU6.2):

Platform	Software	Version
HP	SNAplus	Version 4.0
IBM	Communications Server	Version 5
NCR	SNA Services	Version 3.01
Sun	SunLink SNA/PTP	Version 9.1

Installation User ID Requirements

The installation of an iWay server requires an ID to install and own the files as well as to administer the server; this is also known as the "iadmin" ID. The iadmin ID can be any ordinary user ID, but should not be the root.

The iadmin must have a Korn or Bourne shell as the default logon shell. Running the server in secured mode will also require a particular file to be SETUID to root (this step is done after installation).

End-users will also require an ID for access if the server is running in secured mode. Server data access agents will impersonate these user IDs before performing any file access on their behalf.

In this documentation, iadmin user ID names and group associations are "iadmin;" this name is only suggested for easier reference. You may use any actual name for the administrator ID.

Linux sites must install the Public Domain Korn Shell (pdksh) package from their respective Linux vendor for proper use of the software.

Note: For security purposes, the iadmin ID should be available only to users who require administrative privileges to the server.

Installing the Server

Installation takes place in three steps:

- Mounting the software CD-ROM.
- Performing the installation.
- Dismounting the software CD-ROM.

Mounting the Software CD

Before beginning installation, you must make the software on the CD accessible to the user performing the actual installation. To do this, the media may be mounted and the setup program directly accessed; or the media may be mounted and the contents copied to disk for later access.

CD-ROM is the only format in which software is available.

Procedure How to Mount the Software CD

If the machine on which the software is being installed does not have a CD-ROM device, see *How to Mount the CD on Machines Without a CD-ROM Device* on page 3-7.

The CD-ROM will now be accessible to the ID doing the actual install.

The install process does not require that any files be copied to disk before running the setup program. The setup program can be accessed directly from the CD-ROM.

1. Log on as root. (This is usually required by the mount command).
2. If you do not have a standard location for mounting CD-ROM media, create a directory to which you will mount the CD; for example, /cdrom.
3. After inserting the software CD into the CD-ROM drive, mount the CD by issuing the following command:

For Operating System	Enter
Compaq Tru64	`mount -t cdfs -o noversion device_name / cdrom_directory`
IBM AIX and Bull Escala	`mount -r -v cdrfs device_name / cdrom_directory`
Linux (Any vendor)	`mount device_name / cdrom_directory` **Note:** Linux will usually auto mount your CD-ROM as /cdrom; no further actions need to be taken.
IBM Dynix/ptx, NCR MP-RAS and UnixWare	`mount -F cdfs -r device_name / cdrom_directory`
Siemens Reliant	`mount -F hs device_name / cdrom_directory`
Solaris (without volume management)	`mount -F hsfs -r device_name / cdrom_directory`

For Operating System	Enter
Solaris (with volume management)	CD-ROM is auto mounted as */cdrom_directory*/iWay **Note:** iWay is the standard volume label for iWay CD-ROMs.

where:

device_name

Is the system name for your CD-ROM device. Consult your UNIX System Administrator for the name of the device for your platform.

cdrom_directory

Is the directory to which you will be mounting the

CD-ROM drive. This is a static directory for Solaris Volume Management.

The CD-ROM will now be accessible to the ID doing the actual install.

The install process does not require that any files be copied to disk before running the setup program. The setup program can be accessed directly from the CD-ROM.

Procedure **How to Mount the CD on Machines Without a CD-ROM Device**

If your machine does not have a CD-ROM device, the following steps must be followed prior to installation:

1. Unload the CD to a disk drive on a machine on your network that has the appropriate device. Usually, any UNIX or PC machine may be used.
2. Transfer the CD-ROM files (in binary mode) to a temporary directory on the machine on which you wish to install the software.
3. Continue as though the machine you are using has a CD-ROM device, but specify actual disk drive locations.

Note: Files transferred from a PC might be capitalized on the CD. After the ftp, these files must be renamed in lowercase, and the permissions on the files must be checked. Permissions should be as follows:

```
-rwxr-xr-x    inu.out
-rw-r--r--    iserver.tar
-rwxr-xr-x    isetup
```

Use the chmod command to change permissions if necessary.

Procedure How to Install the Server

Note: For performance reasons, the software should not be installed or accessed using NFS-mounted disks; a directly connected disk is always preferable.

1. Log in as the iadmin user ID.

   Note: Logging on with the iadmin ID is recommended (rather than with "su" from root).

2. Set the default protection mask to minimally read/execute (if it has not already been set to that option). For example:

   ```
   $ umask 022
   ```

   The install procedure may be run from any directory; you do not need to "cd" to that directory (provided the full path name is used). Also ensure that you have write privileges to the directory from which you are running the command. To test this, enter:

   ```
   $ touch xxxx
   ```

3. The installation procedure name is isetup. Call it using the appropriate full path name to the CD-ROM location (or where ever the procedure is located).

   ```
   $ /cdrom/isetup
   ```

   The isetup program requires a license key plus five basic parameters. The default values are presented at the beginning of the program. You may skip to final confirmation; otherwise, you are prompted for individual changes.

   The five required parameters are:

Parameter	Description
EDAHOME	Location for actual software.
EDACONF	Location for default configuration.
APPROOT	Location for default applications and sample applications
Server Admin Password	Server Administrator password. It is recommended to supply a password, although it is only required when running the server in the WCPROTECT mode.
TCP Base Port	The port number the server's TCP Listener listens on. Also the start of the set of four port numbers used by the server for other TCP-based services.

Example Generating a UNIX Installation

The following is an example of a Full-Function Server installation that shows the defaults being taken. If you are satisfied with the selections, answer yes to the final prompt and wait for the return of the command prompt before proceeding to the next step.

If you decide to change a default, you will be prompted for the individual values. However, there are some rules about directory locations. The default root location is the iadmin user ID home directory. The EDAHOME directory path name is locked into the pattern *ibi/srv51*/home*. If you change EDAHOME, the default EDACONF follows the change in the pattern. EDACONF can also be changed, but is locked into a similar pattern.

```
$ /cdrom/isetup

------------------------------------------------------------------------
               Welcome to the Product Set Up Facility
    Please respond to the prompts or enter Q to quit at any prompt.
------------------------------------------------------------------------

Select an options:

   1. Install and Configure
   2. Add Additional Configuration Instance
   3. Refresh Installation (Reinstall, Keep Configurations)
   4. Install Debuggables to the Installation Directory

Enter a selection (Default=1) : 1

------------------------------------------------------------------------
 Enter your License Key (Format 999-999-9999) :   xxx-xxx-xxxx

   License Key has been checked
   Product: Full Function Server
   Maximum Number of Users: 2
   Maximum Number of CPUs: 2
ISETUP: License xxx-xxx-xxxx has been accepted

------------------------------------------------------------------------
Please enter the full path name of the media for the product

(Default=/cdrom/iserver.tar)

Please supply media or <Enter> :
------------------------------------------------------------------------
```

```
Enter the Server Administrator (iadmin) Password:

------------------------------------------------------------------------
Please review the default settings.

EDAHOME =/home/iadmin/ibi/srv52/home

EDACONF =/home/iadmin/ibi/srv52/ffs

APPROOT =/home/iadmin/ibi/apps

TCP_BASE_PORT = 8100

If you are satisfied with the default settings you may proceed to
final confirmation else you will be prompted for individual values.
Proceed with defaults? (Y/N Default=Y)        :  y

The following selections have been made for ...

Install Options ...

   INSTALLATION_DEVICE = /cdrom/iserver.tar
   PRODUCT = server
   EDAHOME = /home/iadmin/ibi/srv52/home

Configure Options ...

   EDACONF = /home/iadmin/ibi/srv52/ffs
   EDAHOME = /home/iadmin/ibi/srv52/home
   LICENSE = xxx-xxx-xxxx
   APPROOT = /home/iadmin/ibi/apps
   PRODUCT = server
   SERVER_TYPE = ffs
   SERVER_NAME = "IWay 52 Full Function Server"
   SERVER_ADMIN_ID = iadmin
   SERVER_ADMIN_PASSWORD = 2E17EEB1CF514BA4
   TCP_BASE_PORT = 8100

Please confirm these values with one of the following responses ...

   Y = Accept and Proceed
   N = Start Over
   Q = Quit

Please supply confirmation: Y

Please, wait while we are installing the server ...
```

```
ISETUP: Installation Step completed

Please, wait while we are configuring the server ...

ISETUP: Configuration Step completed

------------------------------------------------------------------------

Would you like to start the server (Y/N Default=Y)? : Y

ISETUP: The server has been started

------------------------------------------------------------------------
To administer the server go to a web browser
and open the URL http://edahp2:8101
$
```

Additional Configurations

If you have additional licenses and need to configure an additional Server, log in with the iadmin ID and run EDAHOME/bin/isetup, where EDAHOME is the directory in which the software was installed. At the main menu, select option 2, Add Additional Configuration Instance.

The prompts for adding a configuration are similar to those for an installation, but EDAHOME is the directory where the software was originally installed. Typically, you would not want to accept the defaults, as doing so will cause your current configuration to be overwritten. If the supplied EDACONF already exists, the installation will copy it to a directory called BACKUP.

Refreshing Installation Directories

Sometimes it is necessary to refresh the installation of the Server. To do this run, the isetup program located in the EDAHOME/bin directory. At the main menu, select option 3, Refresh Installation (Reinstall, Keep Configuration). This refreshes programming files under the server installation directory and does not affect any configuration directories. However, it does remove any patches that my have been applied to the Server.

Procedure How to Dismount the Software CD-ROM

When you have finished accessing the CD-ROM, dismount and store it. All UNIX vendors use the following command to dismount:

```
$ umount /cdrom_directory
```

where:

cdrom_directory

Is the mount point directory used in the original mount command.

Normally you will not need the CD again unless a support situation requires debuggable versions of the software to be installed. A set of debuggable versions matching the original software is provided on the CD for this situation if it should arise.

Verifying the Server Installation

After completing the installation, you should verify that the Server is functioning properly.

Procedure How to Test the Server Installation

To test the installation, use the initial configuration that is created by the installation. The server may be brought up, checked, connected to, tested, disconnected, and shut down using the following basic steps.

1. Login as the iadmin user ID.
2. Start the server with appropriate path to edastart and -start option:

   ```
   /home/iadmin/ibi/srv52/ffs/edastart -start
   ```

3. Check to ensure that the processes are up with -show:

   ```
   /home/iadmin/ibi/srv52/ffs/edastart -show
   ```

4. Start the Web Console by starting a browser pointed at the HTTP Listener Port of the server. The URL format is http://host:port For example http://host:8101 for the iWay server, and http://host:8121 for WebFOCUS server (if the default ports were used during installation). The actual HTTP Listener port number is one higher than the TCP Listener Port specified during the installation.
5. If the server is running secured, you will receive a login screen. Login as the iadmin user ID.

   Note: For information on how to configure the Server for Secured Mode, see *Configuring the Server with Different Security Modes* on page 3-13.

6. The Home Page of the Web Console will open. The Home Page is arranged in a menu-like context for the various features it supports. Detailed use of the Web Console for configuration or general operation of the server is available as a drill-down on the Web Console Menu and in the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.
7. The Home Page has a link for testing the server. Click the Test Basic Server Functionality link to run a sample report.
8. If you are done using the server, use the "Stop Server" drill-down on the Web Console Menu.
9. If there are startup problems, examine the /home/iadmin/ibi/srv52/ffs/edaprint.log file.

Installing the Debuggable Version

As with any complex software product, there is sometimes a need to produce traces and other information in order to identify problems. The product is shipped with a debuggable version. If necessary, it should be installed using the isetup tool. Select option 4, Install Debuggables to the Installation Directory, from the main menu. The original installation CD is required in order to complete this installation. The debuggable version should not be installed and activated unless explicitly requested by customer support for problem resolution.

Configuring the Server with Different Security Modes

There are three security modes for a server.

1. Security OFF. This is the default unless security was configured.
2. Security ON. With security ON, users must either send a password to connect to the server or use some other form of verification.
3. Security WCPROTECT. With security WCPROTECT, users are not verified against the operating system, but will be verified against the edaserve.cfg file when logging into the Web Console.

Each of these security options can be set with the EDAEXTSEC variable, as follows.

```
export EDAEXTSEC={ON|OFF|WCPROTECT}
```

The default is OFF unless the server has been configured for Secured Mode, as described below; then the default is ON.

Procedure How to Configure the Server for Secured Mode

Although the actual installation is done with an ordinary user id, this procedure requires root permission.

Note: The Server should be down when carrying out this procedure.

1. Log on as root or su to root.
2. Change your current directory to the bin directory of the home directory created during the installation procedure.

   For example, enter the following command:

   ```
   cd /home/iadmin/ibi/srv52/home/bin
   ```

3. Change file ownership permissions by entering the following commands:

   ```
   chown root tscom300.out
   ```

   ```
   chmod 4555 tscom300.out
   ```

4. Verify your changes by issuing the following command:

   ```
   ls -l tscom300.out
   ```

   The output should be similar to the following:

   ```
   -r-sr-xr-x 1 root iadmin 123503 Aug 23 04:45 tscom300.out
   ```

Note the permissions and ownerships.

Your software is now installed along with an initial configuration.

Procedure How to Configure the Server for WCPROTECT Mode

1. Prior to starting the server, issue the variable EDAEXTSEC as follows:

   ```
   export EDAEXTSEC=WCPROTECT
   ```

2. Start the server.

A user will only be authenticated when connecting to the Web Console. Only the ID and Password in the edaserve.cfg will have administrative access to the server.

General Server Startup and Use

After configuring for secured mode (if desired), the server is started and managed with the same steps as those that start the Web Console and verify the server. For more information, see *How to Test the Server Installation* on page 3-12. If the server has not been configured for adapters yet, now is an appropriate time to do so using the Web Console and the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.

Reference **Commonly Used Server Start Options and Functions**

`edastart`	Starts server with the line mode console to actively view server log and dynamically issue edastart options such as show, traceon, and stop. Uses Control C to get console command prompt.
`edastart -start`	Starts the server.
`edastart -sstart n`	Starts the server, but waits n seconds for actual start up.
`edastart -show`	Shows general status of server and agents.
`edastart -stop`	Stops the server.
`edastart -cleardir`	Removes all temporary directories and files created by the server.
`edastart -traceon`	Turns on tracing. May be used at initial start up or after start. Should not be turned on (due to overhead) unless there is a problem that needs to be traced. It is always preferable to run traces at initial start up time unless instructed otherwise.
`edastart -traceoff`	Turns off tracing.
`edastart -?`	Displays edastart options.
`edastart -?s`	Displays support information and support related options.

Troubleshooting Safe Mode

If the Server starts in safe mode normal use of the server is disabled. However the administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the HOME page. Click the fix hyperlink listed under the problem and make the correction. Save and restart the server. A common reason for the server to start in safe mode is that the server_admin_password is not correct.

If the server administrator does not have a password a secured server will always start in safe mode. To correct this a password will need to be added for this ID on the operating system.

CHAPTER 4

Server Installation for OS/390 and z/OS

Topics:

- Installation Requirements
- Installing the Server
- Configuring the Server for Secured Mode
- Verifying the Server Installation
- Pre-Configuration Requirements for the Data Adapters
- General Server Startup and Use
- Migration from the Server for MVS
- Accessing MVS Application Files
- Getting Diagnostic Information
- Troubleshooting Safe Mode

These topics describe the requirements and procedures for the installation of the Server for OS/390 and z/OS.

Installation Requirements

The following table lists the supported platforms and operating system levels.

Hardware / Operating System Vendor	Operating System Release
OS/390	2.10
z/OS	1.1 or higher

Before beginning the server installation, you should review the following requirements:

- Supported Adapters
- Disk Space Requirements
- Memory Usage
- Communications Requirements
- Disk Allocation and Mount Point
- Setting Up User IDs for the Server
- Changing the Ownership and Permission

Supported Adapters

This server supports the following DBMS Data Adapters:

ADABAS
BULL GCOS
DATACOM
DB2 CLI
DB2 CAF
EJB
FLAT FILES
FOCUS
CA-IDMS/SQL
CA-IDMS/DB
IMS
MILLENNIUM
MQ Series
MODEL 204
ORACLE
PEOPLESOFT
TERADATA
SAP
SIEBEL
SUPRA
TOTAL
VSAM
XML

Specific DBMS information (such as release levels, user IDs, and passwords) are not used during the basic installation, but will be used later during configuration.

Disk Space Requirements

The following table lists approximate disk space requirements for each platform. Specific sizes may vary slightly with options selected during configuration. The usage numbers do not include space for actual applications, databases, sort space, output preparation, or logs.

Platform	Version	During Install	After Install
OS/390	2.10	1 Gigabytes	750 meg
z/OS	1.1 thru 1.4	1 Gigabytes	750 meg

Memory Usage

Memory usage of a configured environment consists of the following elements:

- Workspace Manager.
- Listeners.
- Concurrently running application agents.

Actual memory usage differs between applications and depends on features used in the application. The following table details memory usage values:

Platform	Workspace Memory	Memory Per Agent
OS/390	9 Megabytes	1.2 Megabytes
z/OS	9 Megabytes	1.2 Megabytes

Communications Requirements

The TCP/IP Transport protocol is supported on all platforms and is the primary method of communication between connector applications and servers. Up to four consecutive open ports for each server you want to run will be used. The starting number of consecutive ports is required for installation.

Disk Allocation and Mount Point

The file system is the entire set of directories and files, consisting of all HFS files shipped with the server product and all files created by the system programmer and users. The system programmer (super user) defines the file system. Subsequently, a super user can mount the file system on directories within the file hierarchy. Together, the file system and mountable file systems comprise the file hierarchy accessed by users and applications. Refer to the IBM Manuals for more information.

Example Allocating the HFS Through JCL

Create the JCL to define the HFS, add a job card and submit.

```
//********* JOB CARD GOES HERE ************//
//
//*************DEFINE HFS ******************//
//DEFWEB EXEC PGM=IEFBR14
//DD1 DD DISP=(NEW,CATLG),DSN=OMVS.SERVER,DSNTYPE=HFS,
// VOL=SER=VPWRKC,DCB=(DSORG=PO),
// SPACE=(CYL,(1200,5),,CONTIG,ROUND)
```

After submitting the JCL, mount the newly created HFS. The following commands are issued at the command line in Option 6 of ISPF.

```
MOUNT FILESYSTEM('OMVS.SERVER')

MOUNTPOINT ('u/iadmin') TYPE (HFS) MODE (RDWR)
```

where:

OMVS.SERVER

Is the name associated with the file system created in the above JCL.

u/iadmin

Is an example directory name. Change this to a value appropriate for your site.

Note: The example u/iadmin directory must pre-exist before issuing the Mount Commands.

Permanently mount the Filesystem by updating your BPXPRMXX member in SYS1.PARMLIB.

Setting Up User IDs for the Server

Installation User ID

The installation of the server will require a non-super user ID that has read access to the BPX.FILEATTR.APF Facility file. We recommend "iadmin" as the install and run ID, but you may choose a site-specific user ID. It is very important that this user ID have a unique numeric UID (User ID Definition). This sample User Id Definition is created using RACF commands that only the Security Administrator can issue. For

User ID Definition Sample

```
ADDUSER iadmin PASSW(xxxx)
DFLTGRP(UNIXGRP)
OMVS(UID(8) HOME(u/iadmin) PROGRAM(/bin/sh))
TSO(ACCTNUM(12345) PROC(PROC01))
```

To check the above ADDUSER was successful, you can issue the following command:

```
[TSO] LISTUSER iadmin OMVS NORACF
```

Example Output

```
USER=iadmin
OMVS INFORMATION
------------------------------
UID=0000000008
HOME=/u/iadmin
PROGRAM=/bin/sh
```

Note: The iadmin ID should only be available to users who require administrative privileges to the server.

A Security Administrator must update the Facility classes of RACF, as shown below. The following commands are issued with ISPF Option 6:

```
RDEFINE FACILITY BPX.FILEATTR.APF UACC(NONE)
    PERMIT BPX.FILEATTR.APF CL(FACILITY) ID(iadmin) ACCESS(READ)
```

The RACF Facility class will have to be refreshed for the above commands to take effect:

```
SETROPTS RACLIST(FACILITY) REFRESH
```

Changing the Ownership and Permission

This step is required for assigning appropriate access privileges to the server. This is the only step that requires super user permission to perform. To change the ownership and permissions, in ISPF Option 6, go into OMVS and issue the following commands:

```
chmod -R 775 /u/iadmin
chown -hR iadmin:pgm /u/iadmin
chgrp -hR pgm /u/iadmin
```

Server System User ID

If you plan to run the server with security on, you must create a Server System ID, which is used when the server needs super user privileges. This ID has to have UID(0) specified in RACF definitions. We recommend "iserver" as the Server System ID, but you may choose a site-specific user ID. This sample user ID definition is created using RACF commands that only the Security Administrator can issue.

User ID definition Sample

```
ADDUSER iserver
DFLTGRP(UNIXGRP)
OMVS(UID(0) HOME(u/iadmin) PROGRAM(/bin/sh))
```

To check the above ADDUSER was successful, you can issue the following command:

```
[TSO] LISTUSER iserver OMVS NORACF
```

Example Output

```
USER=iserver
OMVS INFORMATION
------------------------------
UID=0000000000
HOME=/u/iadmin

PROGRAM=/bin/sh
```

General User ID

All users of the server will require their User ID to have an OMVS segment. An existing TSO user ID profile can be changed by issuing ALTUSER from ISPF Option 6.

```
ALTUSER IADMIN OMVS(UID(nnn) HOME(/u/userid) PROGRAM('/bin/sh'))
```

where:

`userid`

Is the userid selected

Installing the Server

The software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files. The installation tools data set must be unloaded from the tape before the installation is run.

Procedure How to Unload the Installation Data Set

1. Log on to TSO with the iadmin user ID. This user ID must have an OMVS segment defined and access to the HFS directory where the product will be installed.
2. Run an IEBCOPY job to allocate and unload the qualif.SRV52.HOME.DATA data set. This PDS contains the members needed for the actual installation.

Example Unloading the Installation Tools Data Set

The following is a sample JCL for the initial unload.

```
//IEBCOPY  EXEC PGM=IEBCOPY,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD UNIT=workunit,SPACE=(CYL,(5,1))
//OUT1     DD DISP=(NEW,CATLG,DELETE),
//         DSN=qualif.SRV52.HOME.DATA,
//         DCB=(RECFM=FB,LRECL=80,BLKSIZE=3200),
//         SPACE=(CYL,(1,5,25)),
//         UNIT=SYSDA
//IN1      DD DISP=(OLD,PASS),
//            DSN=HOME.DATA,
//            UNIT=cart,
//            VOL=(,RETAIN,,SER=volser),
//            LABEL=(1,SL)
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
  COPY INDD=IN1,OUTDD=OUT1
```

where:

workunit

Is the unit for the work data set.

qualif

Is the high-level qualifier for SRV52.HOME.DATA.

cart

Is the unit type of the tape drive. Common names include 3480, TAPE, or 3490. Change as needed.

volser

Is the label value shown on the media.

After this job has run, qualif.SRV52.HOME.DATA will be allocated, cataloged, and populated with the members needed to continue the product installation.

Executing the ISETUP Procedure

Server installation is comprised of a series of ISPF panels. These panels gather information for the installation process of the server. After the panel dialog is complete, JCL is created and submitted (if required) to install the server on OS/390 and z/OS.

This JCL Job retrieves the remainder of the MVS libraries and HFS files from the media and configures a basic working server.

To begin the installation, execute the ISETUP member in your qualif.SRV52.HOME.DATA. To execute this procedure, use option 6 in ISPF. When you execute ISETUP, the following panel is displayed:

```
IWay Software          Installation and Configuration          OS/390 and z/OS
Command ===>

Welcome to the Product Set Up Facility
Please respond to the following selection

Select an option:

         1. Install and Configure
         2. Add Additional Configuration Instance
         3. Refresh Installation (Reinstall, Keep Configurations)


Enter selection (Default=1) ===>
Enter License Key           ===>     -     -      Last License key processed

Installation qualifier      ===> IADMIN

Enter Job Card information                    Override JCL checking ===> N
===> //IADMIN JOB (ACCT INFO),_____________________________________________
===> //*_____________________________________________________________________
===> //*_____________________________________________________________________
Press Enter to continue, PF3 to END or PF1 for Help
```

Choose the installation type.

1. *Install and Configure* is the default value which will be used for the first installation of the server or to overwrite a previous installation.
2. *Add Additional Configuration Instance* will add a configuration to an existing installation; a new qualif.SRV52.servertype.DATA will be created.
3. *Refresh Installation (Reinstall, Keep Configurations)* is the REFRESH Binaries option. This refreshes the programming files under the server installation directory as well as the MVS load library, but does not affect any configuration files.

Enter the 10-digit *License Key* that was provided with the software. This key should be stored in a safe place for future reference.

The above panel also allows for valid JCL to be provided that will be used for the submission of jobs to the JES queue. You must provide a valid job name (the first seven (maximum) characters following the // on the first JCL line), which defaults to the userid that you are currently using. This job name, plus a job name character (A,B,C and so on) is used in the JCL that is generated by the installation procedure.

If you wish to provide your own JOB Card information, provide valid JCL and select 'Y' for the "Override JCL checking" question. This will cause the same JCL to be used for all jobs that are created.

Below is a list of the jobs created. All members are created in the configuration dataset.

ISETUPJx	Main JCL Job that was used to install the server
GENIADL	JCL to link ADABAS interface
GENIDB2	JCL to bind server plan to DB2
ISTART	To start the server
ISTOP	To stop the server
ICLEAR	Clear server resources after abnormal end
ISHOW	To show current workspace status
ITRCON	To turn on dynamic tracing (server will be started if not already running)
ITRCOFF	To turn off dynamic tracing (server will be started if not already running)

Press *Enter* to continue to the next panel.

If you have chosen option 1, the *New Installation* panel will appear.

```
IWay Software          Installation and Configuration          OS/390 and z/OS
Command ===>
                                NEW INSTALLATION

Please enter the following information for FULL FUNCTION SERVER

  Input Media (blank any field for default)
    Work unit type (default SYSDA)   ===> SYSDA
    Input Media unit type            ===> 3480
    Input Media Volume serial number ===> T5200U
  Installation parameters (blank any field for default)
    HFS Base Directory name          ===> /u/iadmin
    (This value will be the base name for EDAHOME and EDACONF)
    Application Name Space Directory ===> /u/iadmin/ibi/apps
    Server Administrator             ===> IADMIN
    Server Administrator Password    ===>          (optional)
    Server System Userid             ===> ISERVER
    Port Number                      ===> 8100

Will you be configuring DB2 CAF ?    ===> N
                           Adabas ? ===> N

Press Enter to continue, PF3 to return to previous menu or PF1 for Help
```

The *Work unit type* and *Media unit type* will have default values entered, which can be changed if necessary. The *Volume serial number* value will be blank, and is a required parameter (the value shown is an example of the format required).

In the *HFS Base Directory name* field, indicate where the server will be installed. Press *Enter*.

The *Application Name Space Directory* is populated with a directory structure based on the value entered for *HFS Base Directory name*.This Application Name Space directory can be changed if you would like application components to reside in a different directory.

The *Server System Userid* will default to ISERVER on the panel. This value can be changed according to your site. The requirements for this System Userid are discussed in the **Server System User ID** section of *Changing the Ownership and Permission* on page 4-5.

The *Server Administration Password* is optional at this time but recommended. If the password is not provided during installation, then it can be added to the edaserve.cfg using the Web Console. This is only necessary if the server will be running in Secured mode or in WCPROTECTED mode.

The *Port Number* will be the first of four consecutive port numbers that must be available for the listeners and other internal needs. The default is based on the first three digits of the license key. Change the value to match the standard for your site.

If you have chosen Option 2 or 3, you will notice that the panels are similar to Option 1. There are minor differences, which are noted below:

For Option 2, **Adding a Configuration**, the *Work Unit Type*, *Media Unit Type* and *Volume serial number* values are not requested. The option does not require the media because the configuration is being added to an existing installation.

For Option 3, **Refresh Binaries**, the *System Server ID and Port* are not shown on this panel due to the fact this option does not affect the configuration files.The media is required for this option to refresh the existing installation with new programming files under the server installation directory as well as the MVS load library.

Note: If you Refresh Binaries for a secured server, you must reissue the extattr commands. For more information about these commands, see *Configuring the Server for Secured Mode* on page 4-13.

Will you be configuring DB2 CAF or ADABAS?

If you would like to generate the *DB2 CAF Adapter,* change the value from N to Y. Press *Enter*. This panel requires DB2 CAF specific information.

```
The DB2 SDSNCLST library name is the DB2 SDSNCLST library name.

Enter the Subsystem ID for the DB2 system to be connected to.

Enter the plan name to be used when a connection is established.

The plan isolation level determines how data is locked in DB2.
```

Note: For the DB2 CAF adapter, it may be a site requirement for the STEPLIB allocation in the ISTART JCL to include the DB2 SDSNLOAD library. The ISETUP procedure does not do this for you, it will have to be added manually.

When the GENIDB2 job for the DB2 adapter is complete, use the Web Console to configure the DB2 CAF Data Adapter. The Subsystem ID and Plan name provided above will be required in the Web Console configuration screen.

If you would like to generate the *ADABAS Adapter,* change the value from N to Y. Press Enter. The panel displayed requires ADABAS specific information.

```
The Load library name is the fully qualified dataset name for the Adabas
load library.

The Source Library name is the fully qualified dataset name for the
Adabas source library.

The SVC number that the Adabas system uses.

The Version number of the Adabas system.

The Device Adabas uses. Default is 3390.

The Associator Library name is the fully qualified dataset name for the
Adabas associator Library.

The JCL member GENIADL will be created in the configuration library. This
member, when submitted, will generate the Adabas Adapter. Use the Web
Console to configure the Adabas Data Adapter.
```

Would you like to load the Demonstration Files?

If you would like to load the Demonstration Files for the Server, put a Y next to language of your choice otherwise bypass this panel by pressing Enter. If you bypass the panel, no demonstration files will be loaded.

The Installation and Configuration *Confirmation Screen* appears as follows.

```
IWay Software          Installation and Configuration          OS/390 and z/OS
Command ===>
                              NEW INSTALLATION

Please confirm the following information for FULL FUNCTION SERVER

  Input Media
    Work unit type (default SYSDA)   ===> SYSDA
    Input Media unit type            ===> 3480
    Input Media Volume serial number ===> T5200U
  Installation parameters
    Installation Directory (EDAHOME) ===> /u/iadmin/ibi/srv52/home
    Configuration Directory (EDACONF)===> /u/iadmin/ibi/srv52/ffs
    Application Name Space directory ===> /u/iadmin/ibi/apps
    Server System Userid             ===> ISERVER
    Port Number                      ===> 8100
    Configuration Library (MVS)      ===> IADMIN.SRV52.FFS.DATA



Continue ? (N)o, (C)reate JCL only, (S)ubmit JCL  ===> N   (Enter N, C or S)

Press Enter to process, PF3 to return to previous menu
```

Ensure your values are correct on the Confirmation Panel. The following options are available on this panel:

N

Returns to the initial screen. This can be done if any of the values need to be changed.

C

Creates JCL which can be found in your configuration library and can be submitted at a later time.

S

Creates JCL and submits the job immediately.

In SDSF, check the JESLOG to check for errors and return codes.

Example Server Administration JCL

The ISETUP procedure will generate the configuration dataset qualif.SRV52.servertype.DATA. This dataset contains the member ISTART, which will start the server. The license key used in the ISETUP procedure will determine the server type name when the configuration dataset is created.

An example of the ISTART member follows:

```
//IADMINA    JOB  (IADMIN),'IADMIN',MSGCLASS=X,MSGCLASS=(1,1),CLASS=Y,
//          NOTIFY=IADMIN
//*
//EDASTART   EXEC PGM=EDASTART
//STEPLIB    DD   DSN=IADMIN.SRV52.HOME.LOAD,DISP=SHR
//EDAPRINT   DD   SYSOUT=*
//SYSPRINT   DD   SYSOUT=*
//EDAPARM    DD   *
//*
//EDAENV     DD   *
TZ=EST5EDT
SECURITY_TYPE=INTERNAL
EDACONF=/u/iadmin/ibi/srv52/ffs
```

The actual configuration directory name (EDACONF) will change based on the license code, and is automatically created by the ISETUP procedure.

Configuring the Server for Secured Mode

The server supports two security types: MVS and INTERNAL (default).

- **Internal security** lets the server call non APF authorized external interfaces (IDMS). For more information, see *How to Configure Internal Security* on page 4-13.
- **MVS security** prohibits the server from calling unauthorized external interfaces. For more information, see *How to Configure MVS Security* on page 4-14.

Procedure How to Configure Internal Security

1. Log on to TSO with an ID with read access to BPX.FILEATTR.APF FACILITY.
2. Using the name of the actual EDAHOME directory, change file attributes by entering the following TSO commands, either in TSO or in ISPF Command Shell (option 6):

   ```
   OSHELL extattr +a /u/iadmin/ibi/srv52/home/bin/tscom300.out
   OSHELL extattr +a /u/iadmin/ibi/srv52/home/bin/edapmdf.out
   ```

3. Verify your changes by issuing the following command:

   ```
   OSHELL ls -E /u/iadmin/ibi/srv52/home/bin/tscom300.out
   OSHELL ls -E /u/iadmin/ibi/srv52/home/bin/edapmdf.out
   ```

The extended attributes portion of the output should be a-s-.

4. The environmental variable SECURITY_TYPE=INTERNAL is the default, and can be found in the ISTART JCL.
5. The libraries allocated to STEPLIB in the ISTART JCL must be APF-authorized. Any non APF-authorized libraries must be allocated the TASKLIB ddname.

Procedure How to Configure MVS Security

1. Log on to TSO with an ID that has read access to BPX.FILEATTR.APF FACILITY.
2. Using the name of the actual EDAHOME directory, change file attributes by entering the following TSO commands, either in TSO or in ISPF Command Shell (option 6):

```
OSHELL extattr +a /u/iadmin/ibi/srv52/home/bin/*.so
OSHELL extattr +a /u/iadmin/ibi/srv52/home/bin/*.out
OSHELL extattr +a /u/iadmin/ibi/srv52/home/bin/isetup
```

3. Verify your changes by issuing the following command:

```
OSHELL ls -E /u/iadmin/ibi/srv52/home/bin/*.so
OSHELL ls -E /u/iadmin/ibi/srv52/home/bin/*.out
OSHELL ls -E /u/iadmin/ibi/srv52/home/bin/isetup
```

   The extended attributes portion of the output should be a-s-.

4. Set environmental variable SECURITY_TYPE=MVS

   The keyword SECURITY_TYPE is placed in the ISTART JCL under the DDNAME EDAENV, as shown below:

```
//EDAENV      DD   *
TZ=EST5EDT
EDACONF=/u/iadmin/ibi/srv52/ffs
SECURITY_TYPE=MVS
```

5. The libraries allocated to STEPLIB in the ISTART JCL must be APF-authorized.

Verifying the Server Installation

After the server is installed and you have configured it for security (if desired), you should verify the server using the Web Console.

Procedure How to Verify the Server

1. Log on to TSO as iadmin.
2. Submit the ISTART JCL to start the server.
3. Check the job output for errors. Look for the EDAPRINT message "Workspace initialization completed."

4. Start the Web Console by starting a browser pointed at the listener port of the server. The URL format is

   `http://host:port`

   where:

   host

   Is the name of the machine on which the server is installed.

   port

   Is the port on which the server is listening.

   For example, http://host:8101 for the iWay server and http://host:8121 for WebFOCUS server (if the default ports were used during installation). The actual listener port number is one higher than the TCP listener port specified during the installation.

5. When you receive the logon screen, log on as the iadmin user ID.
6. The home page of the Web Console will open. The features on the home page are arranged in a menu at the left of the window. Information on how to use the Web Console is available as a drill-down on the console itself and in the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.
7. The home page has a link for testing the server. Click *Test* to run a sample report.
8. If you are finished using the server, click *Stop Server* at the left of the Web Console window.
9. If you experience problems at start up, examine the job output for more information.

Pre-Configuration Requirements for the Data Adapters

For all Data Adapters, the following two general rules apply:

- If you are using non-APF authorized DBMS Libraries, you must allocate the libraries to the ddname TASKLIB and not STEPLIB as stated below.
- After the editing the ISTART JCL and starting the server, use the Web Console to complete the configuration of the Data Adapter(s).

DATACOM Data Adapter

Prior to configuring the DATACOM Data Adapter, you must allocate the CA-DATACOM load library to the STEPLIB allocation in the ISTART member of qualif.SRV52.HOME.DATA.

DB2 CAF Data Adapter

Customizing the DB2 Security Exit

You should customize the DB2 security exit to allow the DB2 adapter to run with user-level security enabled. If you do so, each user will connect to DB2 with the authorization of the user ID with which they logged on to the server. The server must also be running with security turned on.

If you do not customize the DB2 security exit, all users will be assigned the connect ID to DB2 that is associated with the region, job submitter, or started task.

The changes that must be made to the IBM DB2 signon exit, DSN3SATH, differ for RACF and CA-TOP SECRET sites and CA-ACF2 sites.

- For an example of the changes that must be made in DSN3SATH for RACF and CA-TOP SECRET sites, see *Changing DSN3SATH for RACF (Version 6.1 example code) and CA-TOP SECRET Sites* on page 4-17.
- For an example of the changes that must be made in DSN3SATH for CA-ACF2 sites, see*Changing DSN3SATH for CA-ACF2 Sites* on page 4-20.

The arrows shown in the examples indicate the lines containing the recommended modification of DSN3SATH, which calls the module FOCDSN3 the supplied exit.

Once you have finished the edits, assemble the exit into an object file. This object file is input to the link JCL found in *Modifying the Link JCL for DSN3SATH* on page 4-20.

Note:

- The positioning of these lines is appropriate, assuming that no other changes or additions have already been made to DSN3SATH. If any changes have been made, you should decide on the most appropriate location for this call to FOCDSN3.
- FOCDSN3 is used to set the proper primary (individual user ID) authorization.
- Another program, FOCDSN4, is used to set the proper secondary (group ID) authorization for RACF and CA-TOP SECRET. FOCDSN4 is not needed with CA-ACF2; the secondary authorization ID(s) will be set correctly without it.

Example Changing DSN3SATH for RACF (Version 6.1 example code) and CA-TOP SECRET Sites

```
SATH001  DS    0H
         USING WORKAREA,R11         ESTABLISH DATA AREA ADDRESS ABILITY
         ST    R2,FREMFLAG          SAVE FREEMAIN INDICATOR
         XC    SAVEAREA(72),SAVEAREA CLEAR REGISTER SAVE AREA
         LA    R15,SAVEAREA         GET ADDRESS OF CSECT'S SAVE AREA
         ST    R13,FOUR(,R15)       CHAIN THE SAVE AREA BACK POINTER
         ST    R15,EIGHT(,R13)      CHAIN SAVEAREA FORWARD
         LR    R13,R15              ADDRESS OF CSECT'S SAVE AREA SPACE
         XC    EXPLARC,EXPLARC      INIT RETURN CODE TO NORMAL RETURN
         XC    SECCOUNT,SECCOUNT    CLEAR GROUP NAME COUNTER FIELD
         L     R8,PSAAOLD-PSA       GET CURRENT ASCB ADDRESS AND
                                    USING ASCB,R8 SET MAPPING
                                    ADDRESS ABILITY
         EJECT
**********SECTION 1:  DETERMINE THE PRIMARY AUTHORIZATION ID  *********
*                                                                     *
*   IF THE INPUT AUTHID IS NULL OR BLANKS, CHANGE IT TO THE AUTHID    *
*   IN EITHER THE JCT OR THE FIELD POINTED TO BY ASCBJBNS.            *
*                                                                     *
*   THE CODE IN THIS SECTION IS AN ASSEMBLER LANGUAGE VERSION OF      *
*   THE DEFAULT IDENTIFY AUTHORIZATION EXIT. IT IS EXECUTED ONLY      *
*   IF THE FIELD ASXBUSER IS NULL UPON RETURN FROM THE RACROUTE       *
*   SERVICE. FOR EXAMPLE, IT DETERMINES THE PRIMARY AUTH ID FOR       *
*   ENVIRONMENTS WITH NO SECURITY SYSTEM INSTALLED AND ACTIVE.        *
*                                                                     *
***********************************************************************
         SPACE
--->     LA    R1,AIDLPRIM          LOAD PARM REG1
--->     CALL  FOCDSN3              GO GET EXIT
         CLI   AIDLPRIM,BLANK       IS THE INPUT PRIMARY AUTHID NULL
         BH    SATH020              SKIP IF A PRIMARY AUTH ID EXISTS
         L     R7,ASCBCSCB          GET CSCB ADDRESS
         CLI   CHTRKID-CHAIN(R7),CHTSID IS IT TSO FOREGROUND ADDR SPACE
         BNE   SATH010              BRANCH IF NOT
         L     R7,ASCBJBNS          GET ADDRESS OF LOGON ID
         MVC   AIDLPRIM,0(R7)       MAKE IT THE PRIMARY AUTH ID
         B     SATH019              TO END OF THIS ROUTINE
SATH010  DS    0H                   NOT TSO, BUT BATCH OR STC SPACE
         L     R6,PSATOLD-PSA       CURRENT TCB ADDRESS
         L     R7,TCBJSCB-TCB(,R6)  CURRENT JSCB ADDRESS
         L     R5,JSCBJCT-IEZJSCB(,R7) CURRENT JCT ADDRESS
         LA    R5,X'10'(,R5)        ADJUST FOR CORRECT DSECT MAPPING
         CLI   JCTUSER-INJMJCT(R5),X'4E' IF JCTUSER PLUS SIGN OR LESS
         BNH   SATH019              THEN LEAVE AIDLPRIM BLANK KEB0026
         MVC   AIDLPRIM(7),JCTUSER-INJMJCT(R5) COPY JOB USER ID
         MVI   AIDLPRIM+7,BLANK     ASSURE BLANK PADDING
SATH019  DS    0H                   END OF ROUTINE
         EJECT
```

```
*****SECTION 2:  DETERMINE THE LIST OF SECONDARY AUTHORIZATION IDS*****
*                                                                     *
*    THIS SECTION IS WRITTEN SPECIFICALLY FOR THE RACF ENVIRONMENT.   *
*    IT CAN/SHOULD BE REPLACED FOR OTHER SECURITY PRODUCTS.           *
*                                                                     *
***********************************************************************
*                                                                     *
*    IF RACF IS ACTIVE AND THE LIST OF GROUPS OPTION IS ALSO ACTIVE,  *
*    USE THE CGRP AREA TO GET THE CONNECTED GROUP NAMES.              *
*    COPY THEM TO THE SECONDARY ID LIST IN THE AIDL.                  *
*                                                                     *
***********************************************************************
         SPACE
         CLI   AIDLPRIM,BLANK      IS THE INPUT PRIMARY AUTHID NULL
         BNH   SATH090             EXIT IF PRIMARY AUTH ID NULL
SATH020  DS    0H                  BRANCH TO HERE IF PRIMARY EXISTS
```

```
*****OPTIONAL CHANGE @CHAR7:  FALLBACK TO SEVEN CHAR PRIMARY AUTHID****
*                                                                     *
*    IF YOUR INSTALLATION REQUIRES ONLY SEVEN CHARACTER PRIMARY       *
*    AUTHORIZATION IDS (POSSIBLY TRUNCATED) DUE TO DB2 PRIVILEGES     *
*    GRANTED TO TRUNCATED AUTHORIZATION IDS, THEN YOU MUST BLANK OUT  *
*    COLUMN 1 OF THE ASSEMBLER STATEMENT IMMEDIATELY FOLLOWING THIS   *
*    BLOCK COMMENT. THEN ASSEMBLE THIS PROGRAM AND LINK-EDIT IT INTO  *
*    THE APPROPRIATE DB2 LOAD LIBRARY AS EXPLAINED IN AN APPENDIX     *
*    OF "THE DB2 ADMINISTRATION GUIDE".                               *
*                                                                     *
*    OTHERWISE, YOU NEED DO NOTHING.                                  *
*                                                                @KYD0271*
***********************************************************************
*        MVI   AIDLPRIM+7,BLANK    BLANK OUT EIGHTH CHARACTER    @CHAR7
         SPACE
         L     R5,CVTPTR           ADDRESS MVS CVT
         L     R7,CVTRAC-CVT(,R5)  RACF CVT ADDRESS
         LTR   R7,R7               IF RACF CVT ADDRESS ZERO,
         BZ    SATH049             RACF IS NOT EVEN INSTALLED
         USING RCVT,R7             SET BASE FOR RACF CVT
         TM    RCVTSTAT,RCVTRNA    IS RACF ACTIVE
         BO    SATH049             SKIP AROUND IF NOT
         SPACE 1
*   RACF IS ACTIVE ON THIS MVS
         USING ACEE,R6             ESTABLISH BASE FOR ACEE     @KYL0108
         ICM   R6,B'1111',AIDLACEE CALLER PASSED ACEE ADDRESS? @KYL0108
         BZ    SATH024             NO, USE ADDRESS SPACE ACEE  @KYL0108
         CLC   ACEEACEE,EYEACEE    IS IT REALLY AN ACEE?       @KYL0108
         BE    SATH027             YES, PROCEED NORMALLY       @KYL0108
         SPACE 1
SATH024  DS    0H                  USE ADDRESS SPACE ACEE      @KYL0108
         L     R6,ASCBASXB         GET ADDRESS SPACE EXTENSION BLOCK
         L     R6,ASXBSENV-ASXB(,R6) GET ACEE ADDRESS
--->     CALL  FOCDSN4             GO GET EXIT (4=GROUP AUTH)
         LTR   R6,R6               DOES AN ACEE EXIST? IF NOT,
         BZ    SATH049             SKIP AROUND CONNECTED GROUP NAME
         CLC   ACEEACEE,EYEACEE    DOES IT LOOK LIKE AN ACEE?
         BNE   SATH049             NO, THEN CAN'T DO GROUPS
         DROP  R8                  DROP ASCB BASE REG          @TU25003
         SPACE 1
SATH027  DS    0H                  CHECK LIST OF GROUPS OPTION @KYL0108
         TM    RCVTOPTX,RCVTLGRP   IS LIST OF GROUPS CHECKING ACTIVE
         BZ    SATH040             SKIP TO SINGLE GROUP COPY IF NOT
         DROP  R7                  DROP RCVT BASE REG          @TU25003
         SPACE 1
*   RACF LIST OF GROUPS OPTION IS ACTIVE
```

Example Changing DSN3SATH for CA-ACF2 Sites

```
*************************************************************
*       PRIMARY AUTHORIZATION ID                            *
*************************************************************
*
-->     LA      R1,AIDLPRIM           POINT TO AUTH FIELD
-->     CALL    FOCDSN3               CALL TASK-LEVEL-EXIT
        CLI     AIDLPRIM,C'  '        PRIMARY AUTHID THERE?
        BH      PRIMTSO               ..YES, EVERYTHING OK HERE
        L       R3,PSAAOLD-PSA(0)     CURRENT ASCB ADDRESS
```

Example Modifying the Link JCL for DSN3SATH

This is sample link JCL for the IBM exit DSN3SATH. Modify the JCL to link the modules into the DB2 security exit as follows.

```
//LKED EXEC PGM=IEWL,PARM='LIST,XREF,LET,RENT,AMODE=31'
//OBJECT    DD DSN=db2pref.SDSNSAMP.OBJ,DISP=SHR <--OUTPUT OF ASSEMBLE
STEP
//EDAMOD    DD DSN=qualif.SRV52.HOME.LOAD,DISP=SHR
//SYSLMOD   DD DSN=db2pref.DSNEXIT,DISP=SHR
//SYSPRINT  DD SYSOUT=*
//SYSUT1    DD UNIT=SYSDA,SPACE=(100,(50,50))
//SYSLIN    DD *
  INCLUDE OBJECT
  INCLUDE EDAMOD(FOCDSN3)
  INCLUDE EDAMOD(FOCDSN4)      <---OMIT FOR CA-ACF2
          ENTRY DSN3@ATH
  NAME DSN3@ATH(R)
/*
```

where:

db2pref

Is the prefix for the DB2 data sets.

qualif

Is the high-level qualifier for the data sets.

Once this job finishes successfully, you must recycle the DB2 subsystem in order for the changes to take effect.

DB2 CLI Data Adapter

The DB2 CLI adapter makes use of DB2 Plan DSNACLI. Ensure that the GRANT EXECUTE command is issued for all users who will be executing this plan:

```
GRANT EXECUTE ON PLAN planname to PUBLIC
```

Prior to the Configuration of the DB2 CLI Data Adapter, add the DSNAOINI variable to the EDAENV DDname in the ISTART JCL. This variable points to the location of the db2cli.ini file.

Example ISTART JCL with DB2 CLI Variable DSNAOINI

```
//IADMINA    JOB  (IADMIN),'IADMIN',MSGCLASS=X,MSGCLASS=(1,1),CLASS=Y,
//          NOTIFY=IADMIN
//*
//EDASTART   EXEC PGM=EDASTART
//STEPLIB    DD   DSN=IADMIN.SRV52.HOME.LOAD,DISP=SHR
//EDAPRINT   DD   SYSOUT=*
//SYSPRINT   DD   SYSOUT=*
//EDAPARM    DD   *
//*
//EDAENV     DD   *
TZ=EST5EDT
SECURITY_TYPE=INTERNAL
EDACONF=/u/iadmin/ibi/srv52/ffs
DSNAOINI=/u/iadmin/db2cli.ini
```

CA-IDMS/DB and CA-IDMS/SQL Data Adapters

Prior to configuration of the CA-IDMS Data Adapters, you must allocate the IDMS.LOADLIB and IDMS.DBA.LOADLIB libraries to the STEPLIB allocation in the ISTART member of qualif.SRV52.HOME.DATA.

SYSCTL and SYSIDMS DDname allocations are also required in the ISTART JCL.

IMS Data Adapter

Prior to configuration of the IMS Data Adapter, you must allocate the following libraries to the STEPLIB allocation in the ISTART member of qualif.SRV52.HOME.DATA.

- The DFHPZP library
- The SDFSRESL library

The IMS Adapter connects using the DBCTL environment.

MODEL 204 Data Adapter

Prior to Configuration of the MODEL 204 Data Adapter, you must allocate the M204 load library to the STEPLIB allocation in the ISTART member of qualif.SRV52.HOME.DATA.

ORACLE Data Adapter

Prior to the configuration of the ORACLE Data Adapter, add the ORACLE specific variables with the EDAENV DDname in the ISTART member of qualif.SRV52.HOME.DATA, as shown below:

Example **ISTART JCL with ORACLE Export Variables Added**

```
//IADMINA    JOB  (IADMIN),'IADMIN',MSGCLASS=X,MSGCLASS=(1,1),CLASS=Y,
//         NOTIFY=IADMIN
//*
//EDASTART   EXEC PGM=EDASTART
//STEPLIB    DD   DSN=IADMIN.SRV52.HOME.LOAD,DISP=SHR
//EDAPRINT   DD   SYSOUT=*
//SYSPRINT   DD   SYSOUT=*
//EDAPARM    DD   *
//*
//EDAENV     DD   *
TZ=EST5EDT
SECURITY_TYPE=INTERNAL
EDACONF=/u/iadmin/ibi/srv52/ffs
ORACLE_SID=ORAT
ORACLE_HOME=/usr/lpp/ora9
LIBPATH=$ORACLE_HOME/lib
```

SUPRA Data Adapter

Prior to configuration of the SUPRA Data Adapter, the following allocations are required in the STEPLIB allocation of the ISTART member of qualif.SRV52.HOME.DATA.

The Supra DBMS has three load libraries: LINKLIB, INTERFLM, and ENVLIB. These load libraries must be allocated to DDname STEPLIB.

The DDname CSIPARM needs to be allocated. This DDname must point to the dataset that contains the CSIPARM definition, which in turn points to the Central PDM you are accessing. Contact your Supra DBA for the name of this file.

General Server Startup and Use

After configuring for secured mode (if desired), the server is started and managed using the same server startup and Web Console startup steps used to verify the server. For more information, see *How to Verify the Server* on page 4-14.

If the server has not yet been configured for adapters, you can do so using the Web Console. Information on how to use the Web Console is available as a drill-down on the console itself and in the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.

Server Startup and Operation Using MODIFY Commands

You can start the server on MVS using modify jobs already running using either the MVS Console or SDSF.

Procedure How to Use MODIFY Commands When the Server is Running

From the MVS console or SDSF, MODIFY commands can be used to pass options to an already running job, use MVS Operator MODIFY commands in the following format:

```
MODIFY jobname, parameters
```

For instance:

```
MODIFY IWAY520,-SHOW
```

Note: If the server job was cancelled or abended, submit the ICLEAR job in the configuration dataset before restarting the server.

Migration from the Server for MVS

Applications running on the traditional Server for MVS will not require any changes when migrated. The server supports read access to all PDSs, such as Master, Access, FOCEXEC, and data. Write access to PDSs will be supported shortly. DYNAM is fully supported in release 5.2 of the server. Also, allocations for all files can be put in your server JCL. The server can read and write sequential files and FOCUS files, both locally and using SU. For new applications, your files (Master, Access and FOCEXEC) will be placed in a pre-specified directory on HFS. All temporary files (such as FOCSORT) will be written to the EDATEMP directory on HFS.

MVS	OS/390 and z/OS
Installation & Configuration	
1. **IEBCOPY** - Unload EDALIB.DATA **2.** **EDAJINS2** - Unload and allocate PDSs **3.** **EDACFGF** - Configuration Routine **4.** Add Jobcard to Server JCL and submit	**1.** **IEBCOPY** - Unload SRV52.HOME.DATA **2.** **ISETUP** - An ISPF Panel Driven Installation which unloads and allocates the Load library, Creates the Server Directory Structure, Copies the files to HFS. **3.** Submit the ISTART Server JCL.

MVS	OS/390 and z/OS
Server JCL	

qualif.INSTALL.DATA(FFSJCL)
//JOBCARD
//
//*
//EDASERVE EXEC PGM=SSCTL
//STEPLIB DD
// DISP=SHR,DSN=qualif.EDALIB.LOAD
//EDARPC DD
DISP=SHR,DSN=qualif.EDARPC.DATA
//FOCEXEC DD
DISP=SHR,DSN=qualif.EDARPC.DATA
//MASTER DD
DISP=SHR,DSN=qualif.EDAMFD.DATA
//ACCESS DD
DISP=SHR,DSN=qualif.EDAAFD.DATA
//EDAPRINT DD SYSOUT=*
//IBISNAP DD SYSOUT=A
//EDASERVE DD
DISP=SHR,DSN=qualif.INSTALL.DATA(FFSSERV)
//ERRORS DD
DISP=SHR,DSN=qualif.EDAMSG.DATA
//EDACSG DD
DISP=SHR,DSN=qualif.INSTALL.DATA(FFSCSG)
//EDACONS DD
DISP=SHR,DSN=qualif.INSTALL.DATA(FFSCONS)
	qualif.SRV52.HOME.DATA(ISTART)
	//JOBCARD
	//
	//*
	//EDASTART EXEC PGM=EDASTART
	//STEPLIB DD
	// DISP=SHR,DSN=qualif.SRV52.HOME.LOAD
	//EDARPC DD
	DISP=SHR,DSN=qualif.EDARPC.DATA
	//FOCEXEC DD
	DISP=SHR,DSN=qualif.EDARPC.DATA
	//MASTER DD
	DISP=SHR,DSN=qualif.EDAMFD.DATA
	//ACCESS DD
	DISP=SHR,DSN=qualif.EDAAFD.DATA
	//EDAPRINT DD SYSOUT=*
	//SYSPRINT DD SYSOUT=*
	//EDAPARM DD *
	//*
	//EDAENV DD *
	SECURITY_TYPE=[MVS|INTERNAL]
	PATH=/bin <--- IBISNAP Setting
	TZ=EST5EDT <--- Time Zone Setting
	EDACONF=/u/admin/ibi/srv52/ffs

Data File Allocations	
Allocations for all files types supported via Dynam or JCL.	PDS Existing masters and access files can be read from existing JCL or DYNAM allocations. New applications will reside on Unix System Services. VSAM, FIXED, and FOCUS R/W Access to files via DYNAM works unchanged. All DYNAM options are supported. DYNAM dataset NO HIPER, UNIT NOHIPER UNIT VIO HIPER

MVS	**OS/390 and z/OS**
DATASET=	

This statement is coded in the Master File.
`FILENAME=FILE1,SUFFIX=FIX,$`
`DATASET='physical.file.name',$`
`.....`
(The above SUFFIX= can also be VSAM or FOC)
	This statement is coded in the Master File
	`FILENAME=FILE1,SUFFIX=FIX,$`
	`DATASET='physical.file.name',$`
	`.....`
	(The above SUFFIX= can also be VSAM or FOC)

SU FOCUS files on a FOCUS Database Server running on MVS (Separate batch job)	

On SSCTL, a DDname was allocated in the server JCL to point to the communications dataset to be used to identify the FOCUS Database Server job on which the FOCUS files reside.
A USE statement was then issued to connect the FOCUS Master File to the DDname allocated to the communications file.
Example:
`//FOCSU01 DD DSN=X.Y.Z,DISP=SHR`
The USE statement in a FOCEXEC:
`USE`
`CAR ON FOCSU01 <=== Can be found in Server Profile`
`END`
	On UNIX System Services, the USE command is left unchanged but the FOCSU01 value now is a NODE name in the servers odin.cfg file.
	Example:
	`USE`
	`CAR ON FOCSU01 <=== Can be found in edasprof.prf`
	`END`
	Identifies SINK machine via communications DD //FOCSU01
	`//FOCSU01 DD DSN=X.Y.Z,DISP=SHR <=== MVS Server communications dataset`
	`NODE=FOCSU01 <===== USS server (odin.cfg file)`
	`BEGIN`
	`PROTOCOL=SBS`
	`CLASS=SUCLIENT`
	`SERVICE=X.Y.Z <====== communications dataset`
	`END`
	The above NODE block resides in odin.cfg and can be constructed using the Web Console.

MVS	OS/390 and z/OS
EDASERVE GLOBAL Section	
qualif.install.data(EDASERVE) EXTSEC = OFF SMFNUM = 254 FASTLOAD = **AUTO** LONGSYNM= ON (in release 5.2, this is the default) LICENSE = 100-111-1231 STORAGEABOVE = 4096 STORAGEBELOW= 512 SZERO=YES APFAUTH=INTERNAL	**/ibi/srv52/ffs/bin/edaserve.cfg** edahome = /u/iadmin server_admin_id = EDADMA license = 100-111-1231 approot = /ibi/edauss/TEST/apps server_name = "IWAY 52 Full Function Server" cfg_date = 07/24/2002 19:14:46 smf_recno=255 EXTSEC = OFF Not Available on USS currently: STORAGEABOVE = 4096 STORAGEBELOW = 512 SZERO=YES LONG Synonym Names are supported on USS and is the default. The LONGSYNM setting does not exist on USS.
EDASERVE Service Blocks	
qualif.install.data(EDASERVE) SERVICE = EDAUSER PROGRAM = TSCOM3 NUMBER_READY = 0 DEPLOYMENT = PRIVATE REFRESH_LIMIT = 100 MAXIMUM = 3 IDLELIM = -1 CPU_LIMIT = 15 MEMORY_LIMIT_ABOVE = nnn MEMORY_LIMIT_BELOW = nnn PRTYGROUP = 10 SERVINIT = *,++ DYNAM ALLOC FILE EDASPROF - DA EDADMA.P513.EDAPROF.DATA(FEDADMA) SHR REU DYNAM ALLOC FILE EDAPROF - DA EDADMA.P513.EDAPROF.DATA SHR REU DYNAM ALLOC FILE IBITRACE - DA EDADMA.P513.INSTALL.DATA(IBITRACE) SHR REU *Multiple Service Blocks are supported.	**/ibi/srv52/ffs/bin/edaserve.cfg** SERVICE = DEFAULT BEGIN number_ready = 2 deployment = private refresh_limit = 100 maximum_q = 0 queue_limit = 120 maximum = 10 cpu_limit = 15 END *Multiple Services are supported. Not Available on USS currently: MEMORY_LIMIT_ABOVE MEMORY_LIMIT_BELOW PRTYGROUP = nn

MVS	OS/390 and z/OS
TRACING	

To enable tracing on the Server:
 	
Allocate IBITRACE in the EDASERVE member. Read the TRACE output from SDSF or send to a file.
 	
`DYNAM ALLOC FILE IBITRACE -`
`DA EDADMA.P513.INSTALL.DATA(IBITRACE)`
`SHR REU`
	To enable tracing on the Server:
	
	IBITRACE allocation is not needed. There are two ways to enable Tracing:
	
	• On the Web Console under DIAGNOSTICS.
	• Submit the ITRCON JCL job.

MVS	OS/390 and z/OS
Server Profiles	
qualif.EDAPROF.DATA(Fuserid) METADATA Allocations: DYNAM ALLOC FILE EDASYNA SHR REU - DATASET EDADMA.V520SA.EDADMA.EDASYNA.DATA DYNAM ALLOC FILE EDASYNM SHR REU - DATASET EDADMA.V520SA.EDADMA.EDASYNM.DATA DYNAM ALLOC FILE EDASYNR SHR REU - DATASET EDADMA.V520SA.EDADMA.EDASYNR.DATA SQL EDA SET USER server/userid,password SQL EDA SET SERVER server SQL [EDA] SET AUTOCLOSE ON FIN|COMMIT SQL EDA SET JOINTYPE ={NestedLoop|SortMerge} HIPER SETTINGS: SET HIPERINSTALL={ON|OFF} SET HIPEREDA={ON|OFF} SET HIPEREXTENTS=nnn SET HIPERFILE=nnn SET HIPERLOCKED={ON|OFF} SET HIPERSPACE=nnn SET BLIM=buffersize SET SLIM=n SET CACHE={0|n} SET EXTSORT={ON|OFF} SET CDN={ON|OFF} SET LANGUAGE=language SET SMARTMODE={ON|OFF} SET SQLENGINE=sqlengine	**/ibi/srv52/ffs/etc/edasprof.prf** APP ENABLE APP PATH IBISAMP **Note:** The settings below are generated in the edasprof as defaults to access MVS Existing Applications and Metadata. APP MAP MVSAPP mas=//dd:master;fex=//dd:focexec;acx=//d d:access;htm=//dd:html APP APPENDPATH MVSAPP SQL EDA SET USER server/userid,password SQL EDA SET SERVER server SQL [EDA] SET AUTOCLOSE ON FIN|COMMIT SQL EDA SET JOINTYPE ={NestedLoop|SortMerge} HIPER SETTINGS: DYNAM MEMIO ON to enable this feature DYNAM MEMIO OFF to disable feature (default) (I/O goes to disk) DYNAM MEMIO HIPER to use HIPERSPACE memory for I/O DYNAM MEMIO MEMORY to use main storage for I/O SET BLIM=buffersize SET SLIM=n SET CACHE={0|n} SET EXTSORT={ON|OFF} SET CDN={ON|OFF} SET LANGUAGE=language SET SMARTMODE={ON|OFF} SET SQLENGINE=sqlengine

Data Adapter Configuration	
MVS	**OS/390 and z/OS**
ADABAS	

Data Adapter Configuration	
MVS	**OS/390 and z/OS**
Configuring the Data Adapter: Edit and run *qualif*.EDALIB.DATA(GENEADL) to re-link ADALNK into FADALINK, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit.	**Configuring the Data Adapter:** During the installation, there is an option for Adabas that will run the link job for the interface. Go to web console and configure.
DATACOM	
Configuring the Data Adapter: Create a DATACOM URT. Create a Server Sided URT.	**Configuring the Data Adapter:** Allocate the CA-DATACOM load library to your STEPLIB in the ISTART jcl. Go to web console and configure.
DB2 CAF	
Configuring the Data Adapter: Edit and run qualif.EDALIB.DATA(RELJINS) to link and bind the DB2 interface, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit.	**Configuring the Data Adapter:** During the installation, there is an option for DB2 that will run the job to bind the Server plan for DB2. In the ISTART jcl, allocate the DB2 SDSN.LOADLIB. Go to web console and configure.
DB2 CL	
Configuring the Data Adapter: NO DB2 CLI available for SSCTL	**Configuring the Data Adapter:** Add the following EXPORT variable to the ISTART jcl: `DSNAOINI=/i/xxxxx/db2cli.ini` Go to web console, supply appropriate values and configure.
CA-IDMS/DB	
Configuring the Data Adapter: Allocate CA-IDMS loadlibs in STEPLIB.	**Configuring the Data Adapter:** Allocate the CA-IDMS/DB loadlibs in STEPLIB. Go to web console and configure.

Data Adapter Configuration	
MVS	**OS/390 and z/OS**
CA-IDMS/SQL	
Configuring the Data Adapter: Edit and run *qualif*.EDALIB.DATA(GENEIDQ) to link module IDQFOC. Allocate CA-IDMS loadlibs in STEPLIB.	**Configuring the Data Adapter:** Allocate the CA-IDMS/SQL loadlibs in STEPLIB. Go to web console and configure.
IMS	
Configuring the Data Adapter: Allocation of IMS loadlibs in STEPLIB.	**Configuring the Data Adapter:** Allocate the IMS loadlibs in STEPLIB. Go to web console and configure.
MODEL 204	
Configuring the Data Adapter: Edit and run *qualif*.EDALIB.DATA(GENE204).	**Configuring the Data Adapter:** Allocate the MODEL 204 loadlibs in STEPLIB. Go to web console and configure.
ORACLE	

Configuring the Data Adapter:
Edit and run *qualif*.EDALIB.DATA(GENEORA) to link and bind the Teradata interface, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit.
Add appropriate load libraries to Server JCL.
	Configuring the Data Adapter:
	Add the following EXPORT variables to the ISTART jcl:
	`ORACLE_SID=ORAT`
	`ORACLE_HOME=/usr/lpp/oracle9`
	Go to web console, supply appropriate values and configure.

SUPRA	
Configuring the Data Adapter: Edit and run qualif.EDALIB.DATA(GENEFSP) Allocate the SUPRA loadlibs in STEPLIB.	**Configuring the Data Adapter:** Allocate the SUPRA loadlibs in STEPLIB. Go to web console and configure.
Teradata	

Data Adapter Configuration	
MVS	**OS/390 and z/OS**
Configuring the Data Adapter: Edit and run *qualif*.EDALIB.DATA(GENEDBC) to link and bind the Teradata interface, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit.	**Configuring the Data Adapter:** Allocate the SUPRA loadlibs in STEPLIB. Go to web console, supply appropriate values and configure.
Console	

Configuring the Data Adapter:
LU2 Console
How to Start the Console
Type the following command at the prompt:
`LOGON APPLID(consoleapplid)`
where:
`consoleapplid`
Is the LU2 applid used to communicate with the console. Its value can be found in the adapter JCL file (EDACONS).
	Web Console
	How to Start the Web Console:
	Start the HTTP Web Console by starting a browser pointed at the HTTP Listener Port of the server. The URL format is http://host:port. For example, http://host:8101 for the Full-Function Server (if the default ports were used during installation). The actual HTTP Listener port number is one higher than the TCP Listener Port specified during the installation.

Media	
The server software is provided on a cartridge in 3480 or 3490 format with MVS PDSs. The server software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files.	The server software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files.

Data Adapter Configuration	
MVS	**OS/390 and z/OS**
Configure a Secured Server	

In EDASERVE member, set EXTSEC=ON.
 	
The qualif.EDALIB.LOAD library used by the JCL must be APF authorized.
	Logon to TSO with a user ID that has read access to the BPX.FILEATTR.APF Facility. This is for the security internal which is the default. See the documentation for the MVS security setting.
	
	Substituting in the actual EDAHOME directory, change the file attributes by entering the following commands in TSO or in ISFP Command Shell (option 6):
	
	`OSHELL extattr +a /u/iadmin/ibi/srv52/home/bin/edapmdf.out`
	`OSHELL extattr +a /u/iadmin/ibi/srv52/home/bin/tscom3.out`
	
	Verify your changes by issuing the following commands:
	
	`OSHELL ls -E /u/iadmin/ibi/srv52/home/bin/edapmdf.out`
	`OSHELL ls -E /u/iadmin/ibi/srv52/home/bin/tscom3.out`
	
	The qualif.SRV52.HOME.LOAD library used by the JCL must be APF authorized.

Additional Server Settings	
GETUSER subroutine fully supported.	GETUSER subroutine supported with minor adjustments.

Data Adapter Configuration	
MVS	**OS/390 and z/OS**
Metadata	
ADABAS, VSAM, IMS and IDMS use AUTOTOOLS to create master file descriptions (METADATA). DB2, Oracle, Teradata metadata is created via CREATE SYNONYM.	Metadata for the following DBMS is created via the WEB CONSOLE using Create synonym for the following DBMS: ADABAS DB2 CAF and DB2 CLI FIXED IMS CA-IDMS/DB and CA-IDMS/SQL ORACLE Teradata VSAM
ENCLAVE (WLM)	
This parameter is placed in the service block of the EDASERVE configuration file so that an enclave name can be specified. This enclave is a feature of Workload Manager (WLM). WLM_ENCLAVE_TRNAME = TRANSACTION NAME or Service Class	This parameter is placed in the service block of the edaserve.cfg configuration file so that an enclave name can be specified. This enclave is a feature of Workload Manager (WLM). **wlm_enclave_trname** = WLM service class (up to 8 alphanumeric characters)

Additional Migration Information

Agent Services

The server has the ability in the edaserve.cfg configuration file to divide its agents into different services. This is very similar to the service blocks found in the EDASERVE member for the Server for MVS. Each agent is running for a specific service, and each service can have different values for some of the configuration parameters. During installation, the "DEFAULT" service block will be configured in edaserve.cfg. Additional services can be configured as required, using the Web Console.

To manually define a service in the edaserve.cfg, use the following format:

```
SERVICE = <service_name>
BEGIN
deployment = <private|pooled>
eda_user_fixed = <yes|no>
pooled_user = <pooled_user_id>
pooled_password = <pooled_user_password>
maximum = <number>
number_ready = <number>
maximum_q = <number>
queue_limit = <number>
idle_session_limit = <number>
idle_agent_limit = <number>
cpu_limit = <number>
memory_limit = <number>
max_sessions_per_agent = <number>
profile = <file.fex>
unique = <y|n>
END
```

WLM Enclave Feature

A parameter is available in the service block of the edaserve.cfg configuration file so that an enclave name can be specified. This enclave is a feature of Workload Manager (WLM).

Based on this setting, the task will join a WLM enclave when a request starts, and leave the enclave when the request finishes. This gives control of the dispatching priority of the task to WLM. The rules for the WLM enclave will determine how the request is run.

This feature balances a workload so that a long running request will not affect a short running request. This can be achieved through WLM rules designed to lower the priority of a long request after a certain period of time. Without this feature, all requests share the region's priority.

```
wlm_enclave_trname = WLM service class (up to 8 alphanumeric characters)
```

This is a service-level keyword; it is used in the edaserve.cfg. It defines the WLM service class, which is to be used by all requests associated with the service.

SMF Records

The server can write SMF records for each connect and disconnect. Accounting reports can be viewed through the Web Console. The recommended integer value is in an inclusive range from 128 to 255. This number represents the SMF number used by the accounting facility when it sends records to the SMF system. Numbers from 1 to 128 are not recommended. To activate usage accounting, place the smf_recno parameter in the edaserve.cfg.

Syntax

How to Activate SMF Records

To activate SMF records, use the following syntax:

```
smf_recno=255
```

Using Hiperspace for Temporary Datasets

HiperMemory can be used to improve performance for temporary datasets in the server. HiperMemory is a file management feature that accelerates server processing, using hiperspaces to speed up processing of temporary files. These settings are placed in the edasprof.prf file, or in a Remote Procedure Call (RPC).

Syntax

Using DYNAM Commands with HiperMemory

The following section describes the HiperMemory profile commands

```
DYNAM MEMIO [ON|OFF|HIPER|MEMORY]
```

where:

`ON`

Enables the HiperMemory feature.

`OFF`

Disables the feature. I/O goes to disk. This is the default.

`HIPER`

Uses HIPERSPACE memory for I/O.

`MEMORY`

Uses main storage for I/O.

For maximum performance, temporary files can also be opened in memory (in the same address space). Be cautious using memory for temporary files; this may cause problems if the server's region is not large enough.

Note: The DYNAM command must be used to turn this feature on.

The HIPER DYNAM commands can be used either in the edasprof.prf or in an RPC.

Accessing MVS Application Files

A user can access an MVS application by linking the DDNAMEs with the corresponding file extensions. This command can be placed in the edasprof.prf or an RPC. An example of this command follows:

```
APP MAP MVS1 mas=//dd:master1;fex=//dd:focexec1;acx=//dd:access1;htm=//dd:html1
```

This command defines an application called MVS1, which consists of Master Files from DD MASTER1, focexec files from DD FOCEXEC1, Access Files from DD ACCESS1, and html files from DD HTML1. The following command is required in order for the server to access this application.This command can be placed in the edasprof.prf or an RPC:

```
APP APPENDPATH MVS1
```

This command adds the MVS1 application to APPPATH. Then, a user can execute any focexec from the MVS1 application.

Allocating MVS Files

Below are the currently supported techniques for accessing MVS datasets on the server.

VSAM and fixed files can be allocated using DYNAM:

```
DYNAM ALLOC FILE QAVSM DA qualif.QAVSM.VSAM SHR REUSE
DYNAM ALLOC FILE FILE1 DA qualif.FILE1.DATA SHR REUSE
```

R/W access is supported.

Master, Access, and FOCEXEC PDSs can be allocated using JCL:

```
//MASTER DD DISP=SHR, DSN=qualif.MASTER.DATA
```

or using DYNAM:

```
DYNAM ALLOC FILE MASTER DA qualif.MASTER.DATA SHR REUSE
```

For PDSs, only read access is supported.

FOCUS datasets can be allocated locally using the DYNAM, JCL, or DATASET= in the master. Read/Write access is supported. Master renaming and dataset concatenation are supported with the USE command. For example:

```
DYNAM ALLOC FILE CAR1 DA qualif.CAR1.FOCUS SHR REU
DYNAM ALLOC FILE CAR2 DA qualif.CAR2.FOCUS SHR REU

USE
CAR1 AS CAR   master renaming
END
```

or

```
USE
CAR1 as CAR
CAR2 as CAR   master concatenation
END
```

In the master:

```
FILENAME=CAR,SUFFIX=FOC,DATASET=qualif.CAR.FOCUS
```

or

```
FILENAME=CAR,SUFFIX=FOC,DATASET=qualif.CAR.FOCUS
```

Dataset names used in the master must be fully qualified.

```
DYNAM ALLOC FILE CAR DA qualif.CAR.FOCUS SHR REU
```

All DYNAM options are supported with the exception of:

```
DYNAM  CLOSE
DYNAM  COMPRESS
DYNAM  COPY
DYNAM  COPYDD
```

Note: There is no support for native FOCUS files allocated across multiple volumes. Such files should be moved to a Sink Machine or moved to an HFS directory.

Accessing Files on MVS Sink Machine

FOCUS SU Access to legacy SINK machine jobs are supported with the IBI subsystem.

```
USE
   CAR ON FOCSU01
END
```

Where the sink ID refers to a PROTOCOL=SBS node block

```
NODE=FOCSU01          ===== sink id
   BEGIN
      PROTOCOL=SBS    ===== subsystem protocol
      CLASS=SUCLIENT  ===== sink client access
      SERVICE=X.Y.Z   ===== communications dataset
END
```

The above NODE block resides in odin.cfg.

Getting Diagnostic Information

If there is a problem during installation:

1. Rerun the server with the traces on. Submit the ITRCON job in the server configuration dataset.
2. After you have recreated the problem, stop the server and insert -savediag into an EDAPARM DD statement, so it appears as follows:

   ```
   //EDAPARM DD *
   -savediag
   /u/iadmin/diag
   ```

   Now run the JCL again. This will save the diagnostic information in your directory. Make sure you have access to this directory.

   Important: In order for the correct information to be copied to your directory, do not change anything in the EDAENV DD statement.
3. If abends occur in the server, you can also produce a system dump (SYSMDUMP) which will help iWay to diagnose the problem. To get SYSMDUMP, allocate ddname SYSMDUMP pointing to the dataset with the following DCB parameters:

   ```
   RECFM=FB,LRECL=4160,BLKSIZE=4160.
   ```

   In order to get the first dump, add the parameter FREE=CLOSE to your DD statement. The DD statement should appear as follows:

   ```
   //SYSMDUMP DD DISP=SHR,DSN=MYID.EDAPTH.SYSMDUMP,FREE=CLOSE
   ```

   To get the LAST dump, the statement should appear as follows:

   ```
   //SYSMDUMP DD DISP=SHR,DSN=MYID.EDAPTH.SYSMDUMP
   ```

Two IDs must have privileges to write into this dataset: ISERVER and IADMIN. Users DO NOT need write or read access to SYSMDUMP dataset.

4. Save the entire job output for the server (including JES logs).
5. Submit the following gathered information to iWay:
   - savediag directory
   - JCL for ISTART
   - job output
   - sysmdump (if it has been produced)
   - any additional information in terms of how the problem did occur.

Troubleshooting Safe Mode

If the server starts in safe mode, normal use of the server is disabled. However, the administrator can connect to the Web Console to fix the problem. When the Web Console is started, the cause for the server being in safe mode is listed on the HOME page. Click the fix hyperlink listed under the problem and make the correction. Save and restart the server. A common reason for the server to start in safe mode is that the server_admin_password is not correct.

If the server administrator does not have a password, a secured server will always start in safe mode. To correct this, a password will need to be added for this ID on the operating system.

CHAPTER 5

Server Installation for MVS

Topics:

- Installation Requirements
- Unloading the Media

This document describes the requirements and procedures for proper installation of the Server for MVS.

Installation Requirements

Before beginning installation, review the following requirements:

- Supported Platforms and Operating Systems
- Disk Space Requirements
- Memory Requirements

Supported Platforms and Operating Systems

The following software must be installed and operational before installation of the server:

- OS/390 1.3 (or higher) or z/OS 1.1 (or higher).
- VTAM V3.2 or higher.
- An external security manager, if security is required.

Disk Space Requirements

Certain baseline data sets are required for the software, regardless of configuration (in addition to those data sets that depend upon actual configuration). The disk space requirements are as follows:

Baseline	
Data Set	**3380 or 3390 Cylinders**
qualif.EDALIB.DATA	5
qualif.EDALIB.LOAD	100
qualif.EDARPC.DATA	40
qualif.EDAMSG.DATA	18
qualif.EDACTL.DATA	16
qualif.EDA.DBRMLIB	1
qualif.EDAPROF.DATA	1
qualif.EDAINST.DATA	1
qualif.EDAREXX.DATA	1

Hub or Full-Function Servers Only	
Data Set	**3380 or 3390 Cylinders**
qualif.EDAAFD.DATA	1
qualif.EDAMFD.DATA	2
qualif.owner.REMTRANS.LOG	1
qualif.owner.SYSCOLLN.FOCUS	1
qualif.owner.SYSCOLLT.FOCUS	1
qualif.owner.SYSRPC.FOCUS	1
qualif.owner.EDASYNA.DATA	1
qualif.owner.EDASYNM.DATA	1

IBM and OCS TCP/IP Only	
Data Set	**3380 or 3390 Cylinders**
qualif.EDASASC.LINKLIB	5

National Language Support (NLS) Only	
Data Set	**3380 or 3390 Cylinders**
qualif.EDANLS.DATA	40

Note: Retaining the full installation is recommended, in case other services are to be installed on the same system.

Memory Requirements

The following virtual memory is required for operation of the server.

Type of use	Virtual Memory Needed
Base	10 MB
Per Relational Gateway user	850 K
Per Automatic Passthru-only user	1.4 MB
Per Full-Function Server user	3.4 MB

Unloading the Media

Complete the following steps to unload data sets from the distribution media.

Step 1. Unload the Install Tools Data Set From the Media

Choose a high-level qualifier to store the software under and run an IEBCOPY job to allocate and initialize the *qualif*.EDALIB.DATA PDS. This PDS contains the JCL procedures needed for the actual software installation process. Sample JCL for this initial unload is

```
//COPYEM   EXEC PGM=IEBCOPY
//SYSUT1     DD UNIT=workunit,SPACE=(CYL,(5,1))
//OUT        DD DISP=(NEW,CATLG,DELETE), DSN=qualif.EDALIB.DATA,
//              DCB=(RECFM=FB,LRECL=80, BLKSIZE=1600),
//              SPACE=(CYL,(5,1,100)), UNIT=SYSDA
//IN         DD DISP=(OLD,PASS), DSN=EDALIB.DATA,
                UNIT=CART,
                VOL=(,RETAIN,,SER=tapvol),
                LABEL=(1,SL)
//SYSPRINT   DD SYSOUT=*
//SYSIN      DD   *
COPY OUT     DD =OUT,
     IN      DD =IN

//
```

where:

workunit

Is the unit for the work data set.

qualif

Is the selected high-level qualifier for EDALIB.DATA, and the subsequent data sets to be unloaded.

`UNIT=CART`

Is the unit type of the drive where the media is mounted. The default is CART, but other common names include 3480, TAPE, 3420, or 3490; names can be changed as needed.

`tapvol`

Is the volser label value as shown on the actual physical installation media.

After the job has run, the *qualif*.EDALIB.DATA Install Tools PDS will be allocated, cataloged, and populated with the procedures and jobs needed to continue the install.

Example Unloading the Install Tools Data Set From the Media

This sample JCL specifically allocates and unloads the Install Tools PDS into a high-level qualified PDS of IWAY.V5R2M00.EDALIB.DATA. The IWAY.V5R2M00 qualifier was used to indicate a specific product and release, but any qualifier-naming convention may be used.

```
//COPYEM  EXEC PGM=IEBCOPY
//SYSUT1    DD UNIT=   SYSDA,SPACE=(CYL,(5,1))
//OUT       DD DISP=   (NEW,CATLG,DELETE),
                        DSN=IWAY.V5R2M00.EDALIB.DATA,
              /DCB=    (RECFM=FB,LRECL=80,BLKSIZE=1600),
              SPACE=   (CYL,(5,1,100)), UNIT=SYSDA
//IN        DD DISP=   (OLD,PASS), DSN=EDALIB.DATA, UNIT=CART,
              VOL=     (,RETAIN,,SER=T5200E), LABEL=(1,SL)
//SYSPRINT  DD SYSOUT=*
//SYSIN     DD *
COPYOUT     DD= OUT,
IN          DD= IN
//
```

Step 2. Customize Low-level Qualifiers (optional)

Complete this step to change the default low-level data set qualifiers to meet a corporate standard.

Edit the *qualif*.EDALIB.DATA(EDASNAME) member and change the low-level data set qualifiers to reflect corporate naming standards.

```
//  SET EDALIBD='EDALIB.DATA'          Server installation library.
//  SET EDALIBL='EDALIB.LOAD'          Server base load library.
//  SET EDAAFDD='EDAAFD.DATA'          Server Access Files.
//  SET EDAMFDD='EDAMFD.DATA'          Server Master Files.
//  SET EDARPCD='EDARPC.DATA'          Server procedures.
//  SET EDAMSGD='EDAMSG.DATA'          Server messages.
//  SET EDACTLD='EDACTL.DATA'
//  SET EDACICD='EDACICS.DATA'
//  SET EDACICL='EDACICS.LOAD'         Server CICS load library.
//  SET EDASASC='EDASASC.LINKLIB'      Server sockets run-time library.
//  SET EDADBRM='EDA.DBRMLIB'          Server plan library.
//  SET EDAPROF='EDAPROF.DATA'         Server profiles.
//  SET EDANLSD='EDANLS.DATA'          Server NLS library.
//  SET CACWFMD='WINFORMS.DATA'        Cactus screen library.
//  SET CACFCMD='FOCCOMP.DATA'         Cactus compile library.
//  SET EDAINST='INSTALL.DATA'         EDA Installation O/P library.
//  SET EDAREXX='EDAREXX.DATA'         ECC REXX RPC library.
```

Any given name on the list may be used in the install process, the configuration process, or both; it is a single control list for any creation.

Note: Changing low-level qualifier names is not recommended (unless necessary).

Step 3. Allocate the Software Data Sets and Unload the Media

The following steps allocate the actual software data sets and unload them from the media.

Edit the *qualif*.EDALIB.DATA(EDAJINS2) member for the high-level qualifier, volser, and other site requirements (as noted). Add a job card and submit the job to unload the media. The EDAJINS2 JCL parameters are as follows:

```
//EDAPROCS JCLLIB ORDER=qualif.EDALIB.DATA
//*EDADEL  EXECPROC=EDAQDEL,PREFIX='qualif'' ''  (remove * for job rerun)
//EDAALL   EXECPROC=EDAQALL,PREFIX='qualif',
//         DUNIT=SYSDA
//EDAUNL   EXECPROC=EDAQUNL,PREFIX='qualif',',
//TUNIT=CART,TVOL=tapvol,WORK=SYSDA
```

where:

qualif

Specifies the high-level qualifier for the data sets.

`DUNIT`

Specifies the disk unit used when allocating the data sets. In this JCL, the default is SYSDA. To specify volume and unit when allocating the data sets, use the following

```
DUNIT='myunit,VOL=SER=myvol'
```

For example,

```
DUNIT='SYSDA,VOL=SER=USERM1'
```

`TUNIT=CART`

Is the unit type of the drive where the media is mounted. The default is CART; other common names include 3480, TAPE, 3420, or 3490. Change as needed.

`tapvol`

Is the volser label value as shown on the actual physical installation media.

`WORK`

Specifies a DASD work unit. The default is SYSDA. Change as needed.

The following sample JCL (for a modified EDAJINS2) allocates and unloads the remaining required data sets with a high-level qualifier of IWAY.V5R2M00. The IWAY.V5R2M00 qualifier indicates a specific product and release, but any qualifier-naming standard may be used.

```
//EDAPROCS JCLLIB ORDER=IWAY.V5R2M00.EDALIB.DATA
//*EDADEL  EXECPROC=EDAQDEL,PREFIX='IWAY.V5R2M00'
//EDAALL   EXECPROC=EDAQALL,PREFIX='IWAY.V5R2M00',
//         DUNIT=SYSDA
//EDAUNL   EXECPROC=EDAQUNL,PREFIX='IWAY.V5R2M00',
//TUNIT=CART,TVOL=T5100E,WORK=SYSDA
```

Add a job card and submit to start the actual unload.

Note: To rerun this job, remove the * before EDADEL to delete the data sets before reallocating.

The JCL will allocate and load the following data sets:

Data Set	Description
qualif.EDALIB.LOAD	Server base load library.
qualif.EDAAFD.DATA	Server Access Files.
qualif.EDAMFD.DATA	Server Master Files.
qualif.EDARPC.DATA	Server procedures.
qualif.EDAMSG.DATA	Server messages.
qualif.EDACTL.DATA	Server base samples.
qualif.EDASASC.LINKLIB	Server sockets run-time library.
qualif.EDA.DBRMLIB	DB2 installation library.
qualif.EDAPROF.DATA	Server profile.
qualif.INSTALL.DATA	EDA installation O/P library.
qualif.EDAREXX.DATA	ECC REXX RPC library.

Note: When running EDAJINS2, a member named EDAPREFX will be generated in *qualif*.EDALIB.DATA. This member contains the following line

```
//  SET PREFIX='qualif'
```

where:

qualif

Specifies the high-level qualifier for the data sets.

This member is used by subsequent routines to provide the high-level qualifier information for data sets (such as catalogs). However, the JCL used in the actual configuration process requires that the qualifier is edited for actual use. See the *iWay Server Configuration and Operations for MVS* manual for more information on the configuration routines.

Step 5. Unloading the NLS Data Set From the Media (Optional)

Complete these steps when using National Language Support (NLS) features.

The following JCL steps allocate the data sets needed for NLS.

Edit the *qualif*.EDALIB.DATA(NLSJINS2), add a job card, and submit the job. The JCL parameters to change are

```
//EDAPROCS JCLLIB ORDER=qualif.EDALIB.DATA
//*NLSDEL  EXECPROC=NLSQDEL,PREFIX='qualif'    ' (remove * for job rerun)
//NLSALL   EXECPROC=NLSQALL,PREFIX='qualif',',
//         DUNIT=SYSDA
//NLSUNL   EXECPROC=NLSQUNL,PREFIX='qualif',
//TUNIT=CART,TVOL=tapvol
```

where:

qualif

Specifies the high-level qualifier for the data sets.

DUNIT

Specifies the disk unit used when allocating the data sets. In this JCL, the default is SYSDA. To specify a volume and unit when allocating the data sets, use the following form:

```
DUNIT='myunit,VOL=SER=myvol'
```

For example,

```
DUNIT='SYSDA,VOL=SER=USERM1'
```

TUNIT=CART

Is the unit type of the drive which the media is mounted. The default is CART, but other common names include 3480, TAPE, 3420, or 3490. Change as needed.

tapvol

Is the volser label value as shown on the actual physical installation media.

Example Unloading the NLS Data Set From the Media

This sample JCL (of a modified NLSJINS2) allocates and unloads the NLS data sets with a high-level qualifier of IWAY.V5R2M00. The actual qualifier must match the qualifier used in prior steps.

```
//EDAPROCS JCLLIB ORDER=IWAY.V5R2M00.EDALIB.DATA
//*NLSDEL  EXECPROC=NLSQDEL,PREFIX= IWAY.V5R2M00'
//NLSALL   EXECPROC=NLSQALL,PREFIX='IWAY.V5R2M00,
//         DUNIT=SYSDA
//NLSUNL   EXECPROC=NLSQUNL,PREFIX='IWAY.V5R2M00',
//TUNIT=CART,TVOL=T5200E
```

Note: To rerun this job, remove the * before NLSDEL. This will delete the data set before reallocating it.

The JCL will allocate and load the following data set:

Data Set	Description
qualif.EDANLS.DATA	National Language Support library.

This concludes the software installation process. Configuration is covered in the *Server Configuration and Operations for MVS* manual. If a separate administrator performs the configuration, the high-level qualifier selected and used in the installation should be provided for configuration purposes.

CHAPTER 6

Server Installation for OS/400

Topics:

- Installation Requirements
- Media Availability
- Installing the Server
- Verifying the Server Installation
- Configuring the Server With Different Security Modes
- General Server Start Up and Use
- Other OS/400 Start Up Options
- Troubleshooting Safe Mode
- Accessing IFS Files and QSYS Libraries
- Creating JD Edwards Metadata

These topics describe the requirements and procedures for proper installation of the Server for OS/400.

Installation Requirements

Before beginning server installation, review the following requirements:

- Supported Platforms and Operating Systems
- Disk Space Requirements
- Memory Usage
- Communications Requirements
- Requirements for TCP/IP
- Creating User IDs
- MQ XML Listener Requirements

Supported Platforms and Operating Systems

The following table lists supported platforms and operating system releases. Confirm that the platform and the intended operating system releases are supported combinations on the chart, and that the label on the actual media indicates the correct software.

Hardware /Operating System Vendor	Operating System Release	CD-ROM Label
IBM iSeries (RISC)	OS/400 V4R4	OS400 V04R04M00
	OS/400 V4R5	OS400 V04R05M00
	OS/400 V5R1 or Higher (required for DBCS)	OS400 V05R01M00

The software also supports data adapters. See the DBMS support chart for specific combinations. Specific DBMS information (such as release levels, user IDs, and passwords) is not used during the basic installation, but will be used later during configuration.

To use the server for DBCS language code page configurations (i.e. Japanese), you must be running OS/400 V5R1 or higher. The installation process for this level of software includes an additional prompt (as shown in the example below) to select the initial installation code page. Due to the limitations of the OS/400 V5R1 operating system, if you intend to configure for one of the listed DBCS code pages, you must select the initial code page during initial server installation, so that certain files will be unloaded properly. In all cases, the specific language and code page (both DBCS pages and non-DBCS pages) must then also be configured on the Web Console. If your DBCS language is not listed, please contact customer support.

The operating system should also have the latest cumulative patch levels applied.

Disk Space Requirements

The following are approximate disk space requirements. Specific sizes may vary slightly with options selected during configuration. The usage numbers do not include space for actual applications, data sources, sort space, output preparation, or logs.

Platform	Version	During Install	After Install
IBM iSeries OS/400	V4R4	850 Megabytes	425 Megabytes
	V4R5	850 Megabytes	425 Megabytes
	V5R1	850 Megabytes	425 Megabytes

Memory Usage

Memory and shared memory usage depend on the following elements:

- Number of data access agents.
- Type of access that is performed: joins, large retrieval, etc.
- Connection queue.

Actual memory usage differs between applications and the server load.

Communications Requirements

The TCP/IP transport protocol is supported on all platforms and is the primary method of communications between iWay-enabled connector applications and servers. The following sections describe specific protocol requirements.

Requirements for TCP/IP

Up to 4 consecutive open ports for each server you want to run will be used. The starting port number (of the consecutive ports) is required during the installation process, since the initial installation also yields an initial configuration.

Creating User IDs

The installation of an iWay server requires an ID to install and own the files as well as to administer the server; this is also known as the "iadmin" ID. The iadmin ID should:

- not be QSECOFR, have a group of QSECOFR, or have other special authorities.
- have a message queue delivery of *NOTIFY if this is not the default for the system.
- have a HOMEDIR other than the OS/400 default of "/".

In addition to the ID you assigned to administer the server, referred to as *iadmin*, which can have any value you assign, you will need a second ID literally called iadmin to properly unload the CD-ROM library. If this literal iadmin ID is not being used to install and own the files, you can remove it after installation.

To properly create the real iadmin ID and home directory (as QSECOFR), issue the following:

```
CRTUSRPRF USRPRF(IADMIN) PASSWORD(MYPASS) HOMEDIR('/home/iadmin')
TEXT('Server Administrator ID') DLVRY(*NOTIFY)

QSH CMD('mkdir /home/iadmin')
QSH CMD('chmod 755 /home/iadmin')
QSH CMD('chown iadmin /home/iadmin')
```

Running the server in secured mode also requires that particular files have their ownership changed to QSECOFR (this step is done after installation).

End users of the server will also require an ID for access if the server is running in secured mode. The data access agents of the server will impersonate these user IDs before performing any file access on their behalf. No special authorities or setup are needed for these IDs.

In this documentation, iadmin user ID names and group associations are "iadmin;" this name is only suggested for easier reference. You may use any actual name for the administrator ID.

Note: The iadmin ID should only be available to users who require administrative privileges to the server for security purposes.

MQ XML Listener Requirements

For OS/400 System Administrators, the following PTFs must be installed for access to the MQ XML listener.

OS400 V4R4	OS400 V4R5	OS400 V5R1
SF66797 SF66796 SF66621 SF66573 SF66572 SF66428 SF66322 SF66304 SF66102 SF66101 SF66073 SF66071 SF65944 SF65919 SF65823 SF65822 SF65805 SF65128 SF65127 SF65088 SF64746 SF64739 SF64735	SF66797 SF66796 SF66715 SF66714 SF66621 SF66573 SF66572 SF66495 SF66428 SF66322 SF66304 SF66287 SF66102 SF66101 SF66100 SF66073 SF66071 SF65944 SF65939 SF65919 SF65823 SF65822 SF65814 SF65810 SF65805 SF65791 SF65260 SF65165 SF65128 SF65127 SF65088 SF65076 SF64746 SF64739 SF64735 SF63984	

Media Availability

CD-ROM is the only media in which software is available.

Installing the Server

The following steps detail the procedure for installing the software.

1. Log on as QSECOFR ID (or an ID with RSTLIB authority) and restore the product library from the CD to disk with:

   ```
   RSTLIB SAVLIB(R720520BTP) DEV(OPT01)
   ```

   Note: The actual device name may differ; to view available devices, use the command:

   ```
   WRKCFGSTS CFGTYPE(*DEV) CFGD(*OPT)
   ```

   If you have an existing library that you do not want to overwrite, use the following syntax, which assigns the name ABC:

   ```
   RSTLIB SAVLIB(R720520BTP) DEV(OPT01) RSTLIB(ABC)
   ```

   and substitute this alternate library name (ABC in the above example) wherever R720520BTP is used in these instructions.

   The actual library name will also differ when you install a service pack that was part of the initial release (i.e. 5.2.1 versus 5.2.0). The numeric portion of the library name will match the service pack number; for instance, the library name for 5.2.1 would be R720521BTP, while for 5.2.2 it would be R720522BTP, and so forth. In the case of a service pack, the appropriate library name must be substituted as the product library name in these instructions.

2. If you are not using the real iadmin as the iadmin ID to own the files and manage the server, issue (as QSECOFR):

   ```
   CHGOBJOWN OBJ(R720520BTP/INU) OBJTYPE(*PGM) NEWOWN(QSECOFR)
   ```

3. Log on with the iadmin ID. On the OS/400 command line, call the installation procedure:

   ```
   CALL R720520BTP/ISETUP
   ```

The ISETUP program requires a license key (see the shipping manifest for the actual key) plus a few basic parameters. The ID being used to install the software is the server administrator ID (iadmin); its password is prompted for and required to accomplish certain operations. All other parameters have defaults and are displayed. Responding "yes" to this list of defaults skips the process to the final confirmation step; otherwise, you are prompted individually for each of the values.

NLS on a server is set to "off" by default. It is configured using the Web Console as of 5.2.x (unlike previous releases, which required individual prompting during ISETUP for NLS values).

The parameters are:

Parameter	Description
License Key	Installation Key (actual key will be on shipping documents).
EDAHOME	IFS Directory location for files. Any changes in the EDAHOME location must follow the pattern *ibi.srv52*.home* in its declaration.
EDAHOMELIB	QSYS library location for programs.
EDACONF	Location for the default configuration. The default value is based on the license key and any change in the EDAHOME directory pattern. The default will be a sibling directory to the EDAHOME directory in terms of its location, and have a name such as ffs, wfm, etl, spg or wfs (based on the key and on any change in the EDAHOME pattern).
APPROOT	Location for default applications and sample applications.
Server Admin Password	Server Administrator password. It is recommended to supply a password, although it is only required when running the server in the WCPROTECT mode.
TCP Base Port	The port number on which the server's TCP listener listens. Also the start of the set of port numbers used by the server for other TCP based services.

Install Example

The example below shows a Full-Function Server installation using the defaults. The prompts are self-explanatory.

Note: OS/400 Version 5 Release 1 or higher will have additional prompts for DBCS code pages.

From the command line on the OS/400 Menu:

```
CALL R720520BTP/ISETUP

-------------------------------------------------------------------------------
                Welcome to the Product Set Up Facility
    Please respond to the prompts or enter Q to quit at any prompt.
-------------------------------------------------------------------------------
Select an initial code page:

      1. Generic     37 (Configure Specific Code Page via Web Console)
      2. Japanese   939
      3. Japanese  5035

Enter a selection (Default=1) : 1

-------------------------------------------------------------------------------
Select an option:

     1. Install and Configure
     2. Add Additional Configuration Instance
     3. Refresh Installation (Reinstall, Keep Configurations))
     4. Install Debuggables to the Installation Directory

Enter a selection (Default=1) : 1

-------------------------------------------------------------------------------
Enter your License Key (Format 999-999-9999) : xxx-xxx-xxxx

    License Key has been checked
    Product: Full Function Server
    Maximum Number of Users: 2
    Maximum Number of CPUs: 2

ISETUP: License xxx-xxx-xxxx has been accepted

-------------------------------------------------------------------------------
```

```
Please enter the media library name

(Default=R720520BTP)

Please supply media or <Enter> :

------------------------------------------------------------------------
Enter the Server Administrator (IADMIN) Password: XXXXXXX

------------------------------------------------------------------------
Please review the default settings.
EDAHOME = /home/iadmin/ibi/srv52/home
EDAHOMELIB = srv52
EDACONF = /home/iadmin/ibi/srv52/ffs
APPROOT = /home/iadmin/ibi/apps
TCP_BASE_PORT = 8100

If you are satisfied with the default settings you may proceed to
final confirmation else you will be prompted for individual values.
Proceed with defaults? (Y/N Default=Y) : Y

The following selections have been made for ...

Install Options ...
      INSTALLATION_DEVICE = R720520BTP
      PRODUCT = server
      EDAHOME = /home/iadmin/ibi/srv52/home
      EDAHOMELIB = srv52
      APPROOT = /home/iadmin/ibi/apps

Configure Options ...
      EDACONF = /home/iadmin/ibi/srv52/ffs
      EDAHOME = /home/iadmin/ibi/srv52/home
      EDAHOMELIB = srv52
      LICENSE = xxx-xxx-xxxx
      APPROOT = /home/iadmin/ibi/apps
      SERVER_TYPE = ffs
      SERVER_NAME = "IWAY 52 Full Function Server"
      SERVER_ADMIN_ID = iadmin
      SERVER_ADMIN_PASSWORD = ECECC5B1F12E735A
      TCP_BASE_PORT = 8100

Please confirm these values with one of the following responses ...
    Y = Accept and Proceed
    N = Start Over
    Q = Quit
```

```
Please supply confirmation: Y

Please, wait while we are installing the server ...

ISETUP: Installation Step completed

Please, wait while we are configuring the server ...

ISETUP: Configuration Step completed

------------------------------------------------------------------------
Would you like to start the server (Y/N Default=Y)? : Y

ISETUP: The server has been started

------------------------------------------------------------------------
To administer the server go to a web browser and open the URL
http://myhost.mycompany.com:8101

Press ENTER to end terminal session.
```

After pressing the ENTER key, control returns to the command prompt of the OS/400 Menu.

If you are satisfied with the selections, answer "yes" to the final prompt and wait for the return of the command prompt before proceeding to the next step.

If any of the target locations exist, they will be marked with "(*EXISTS*)" on the display line. This gives you the opportunity to change a location if you do not want to overwrite it by changing the default values.

If you decide to change a default, you will be prompted for the individual values. However, you must follow some rules about directory locations. The default root location is the iadmin user ID home directory. The EDAHOME directory path name is locked into the pattern *ibi/srv52*/home*. If you change EDAHOME, the default EDAHOMELIB and EDACONF follow the change in the pattern. The EDAHOMELIB and EDACONF may also be changed, but they are locked into a similar pattern (except for the lowest portion of the EDACONF directory name, which reflects the type of server).

Additional Configurations

If you have additional licenses and need to configure an additional server, log on with the iadmin ID, start QSH, and run EDAHOME bin/isetup, where EDAHOME is the directory on which the software was installed (ibi/srv52/home by default). At the main menu, select option 2, Add Additional Configuration Instance.

The prompts for adding a configuration are similar to those for an installation, but EDAHOME is the directory where the software was originally installed. Typically, you would not want to accept the defaults, as doing so will cause your current configuration to be overwritten. If the supplied EDACONF already exists, the installation will copy it to a directory called BACKUP.

Refreshing an Installation

Sometimes it is desirable to refresh the server software's installation directory (EDAHOME) because it has become accidentally damaged, populated with unwanted files, or needs updating with a service pack. To do this, run the ISETUP program on the CD-ROM from which the software was originally installed, or from a service pack CD-ROM. At the main menu, select option 3, Refresh Installation (Reinstall, Keep Configuration). This refreshes programming files under the server installation directory (EDAHOME) and does not affect any configuration directories. The complete directory tree (EDAHOME) and library (EDAHOMELIB) are removed and re-created; if any files need to be retained, they should be copied elsewhere beforehand.

Debuggable Version

As with any complex software product, there is sometimes a need to produce traces and other information in order to identify problems; thus debuggable software is needed. Whether the original software CD-ROM has these debuggables is generally dependent on disk space. The debuggable version should not be installed and activated unless explicitly requested by customer support for problem resolution. If a separate CD-ROM is required, it will be shipped as needed. When necessary, install the debuggable version by running ISETUP from the appropriate CD-ROM and selecting option 4, Install Debuggables to the Installation Directory, from the main menu.

Verifying the Server Installation

To test the installation, use the initial configuration created by the installation. The server may be brought up, checked, connected to, tested, disconnected, and shut down using the following steps.

1. Log on with the iadmin user ID.
2. There are several methods to start a server and options that may be used. The following method for starting a server (using the appropriate library name and TSCOM300 options) would be the most familiar to an OS/400 Administrator:

   ```
   CALL SRV52/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv52/ffs -start')
   ```

   Alternate startup methods and batch examples are noted below.
3. Check to ensure that the processes are up with -show:

   ```
   CALL SRV52/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv52/ffs -show)
   ```
4. Start the Web Console by starting a browser pointed at the listener port of the server. The URL format is http://host:port. For example, http://host:8101 for the iWay Server and http://host:8121 for the WebFOCUS Server (if the default ports were used during installation). The actual listener port number is one higher than the TCP listener port specified during the installation.
5. If the server is running in secured mode, you will receive a logon screen. Log on with the iadmin user ID.
6. The home page of the Web Console will open. The home page is arranged in a menu like context for the various features it supports. Use of the server admin ID (iadmin) to log on will display server administration features that non admin IDs would not normally see.

   Information on how to use the Web Console is available as a drill-down on the Console itself and in the *Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.
7. The home page has a drill-down for testing the server. Click the test drill-down to run a sample report.
8. If you are done using the server, use the Stop Server drill-down on the Web Console Menu.
9. If there are startup problems, examine the IFS/ home/iadmin/ibi/srv52/ffs/edaprint.log file.

Configuring the Server With Different Security Modes

There are three security modes for a Server.

1. Security OFF. This is the default unless security was configured.
2. Security ON. With security ON, users must either send a password to connect to the server or use some other form of verification.
3. Security WCPROTECT. With security WCPROTECT, users are not verified against the operating system, but will be verified against the edaserve.cfg file when logging into the Web Console.

Each of these security options can be set with the EDAEXTSEC variable, as follows:

```
export EDAEXTSEC={ON|OFF|WCPROTECT}
```

The default is OFF unless the server has been configured for Secured Mode, as described below; then the default is ON.

Procedure How to Configure the Server for Secured Mode

To run a server in secured mode on OS/400, certain files must claim ownership by QSECOFR or a QSECOFR authorized ID. Running with security ON forces users to send a password to connect to the server, or to use some other form of verification. While general installation of the server software is done by iadmin (an ordinary user ID), this step requires QSECOFR authority.

To change ownerships, do the following:

1. Login as QSECOFR.
2. Using the library specified during the installation, change the file ownership by entering the following commands:

```
CHGOBJOWN OBJ(SRV52/TSCOM300) OBJTYPE(*PGM)    NEWOWN(QSECOFR)

CHGOBJOWN OBJ(SRV52/R1SEC)    OBJTYPE(*SRVPGM) NEWOWN(QSECOFR)
```

Your software is now installed along with an initial configuration.

Procedure How to Configure the Server for WCPROTECT Mode

1. Prior to starting the server, issue the variable EDAEXTSEC as follows:

```
export EDAEXTSEC=WCPROTECT
```

2. Start the server.

A user will only be authenticated when connecting to the Web Console. Only the ID and Password in the edaserve.cfg will have administrative access to the server.

General Server Start Up and Use

After configuring for secured mode (if desired), the server is started and managed using the same server startup and Web Console startup steps used for validating the server (steps 1 - 6). If the server has not been configured for adapters, now is an appropriate time to do so, using the Web Console and the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.

OS/400 Sites have the option of using QSH commands that run "edastart" or a CALL to TSCOM300 to start and manage a server.

The chart below lists commonly used "edastart" options and functions (the parameters are the same for TSCOM300 usage).

Command and Option	Function
`edastart`	(No parameters) Starts the server with the line mode console to actively view the server log (edaprint). Also allows dynamically issuing edastart options, such as show, traceon, traceoff, quit, stop, etc. Use your 5250 SysReq key and enter "2" to receive the console command prompt to enter commands. If you are using a PC and 5250 emulator software, see your emulator keyboard map for the PC's equivalent key or use your emulator's help instructions on how to create mapping for the SysReq key.
`edastart -start`	Starts the server in background; only a short message appears.
`edastart -sstart n`	Starts the server, but waits n seconds for actual startup.
`edastart -show`	Shows general status of server and agents.
`edastart -stop`	Stops the server.
`edastart -quit`	Exits the server's line mode console log (edaprint) and returns to the operating system command prompt, but leaves the server running.
`edastart -console`	Reenters the server's line mode console log (edaprint).

Command and Option	Function
`edastart -traceon`	Turns on tracing. May be used at initial startup or after. Tracing should not be turned on (due to overhead) unless there is a problem that needs to be traced. It is always preferable to start traces at initial startup time unless instructed otherwise.
`edastart -traceoff`	Turns off tracing.
`edastart -?`	Displays edastart options (this list, plus more).
`edastart -?s`	Displays support information and support related options.

Note: The OS/400 commands WRKACTJOB and WRKSBMJOB should not be used to shutdown a running server.

Alternate startup methods, which start the server either with command line options or as a submitted job, are detailed in *Other OS/400 Start Up Options* on page 6-15.

Other OS/400 Start Up Options

The methods below may be used to start or manage the server environment using either native OS/400 CALL syntax or QSH syntax. (The directory and library names specified during the installation process are used in these examples.)

- To start the server from the native OS/400 menu command line, use:

  ```
  CALL SRV52/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv52/ffs -start')
  ```

- To start the server from the native OS/400 menu command line with traces, use:

  ```
  CALL SRV52/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv52/ffs -start
  -traceon')
  ```

- To stop the server from the native OS/400 menu command line, use:

  ```
  CALL SRV52/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv52/ffs -stop')
  ```

- To clear all server resources after a malfunction or after server termination using WRKACTJOB or WRKSBMJOB from the native OS400 menu command line, use:

  ```
  CALL SRV52/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv52/ffs -clear')
  ```

- To start the server from the command line of a QSH session, use:

  ```
  QSH (starts QSH)
  /home/iadmin/ibi/srv52/ffs/bin/edastart -start
  ```

- To stop the server from the command line of a QSH session, use:

```
QSH (starts QSH)
/home/iadmin/ibi/srv52/ffs/bin/edastart -stop
```

- To start the server as a QSH session, but from the OS/400 command line, use:

```
QSH CMD('/home/iadmin/ibi/srv52/ffs/bin/edastart -start')
```

- To stop the server as a QSH session, but from the OS/400 command line, use:

```
QSH CMD('/home/iadmin/ibi/srv52/ffs/bin/edastart -stop')
```

- To start the server as a submitted QSH session on the OS/400 command line with a code page (Belgium), use:

```
SBMJOB CMD(QSH CMD('/home/iadmin/ibi/srv52/ffs/bin/edastart'))
JOB(MYJOB) LANGID(NLB) CNTRYID(BE) CCSID(500)
```

- To start the server as a submitted job on the OS/400 command line with a code page (Belgium) and specific job queue, use:

```
SBMJOB CMD(CALL SRV52/TSCOM300 PARM('-edaconf
/home/iadmin/ibi/srv52/ffs'))
JOB(MYJOB) LANGID(NLB) CNTRYID(BE) CCSID(500) JOBQ(MYQUEUE)
```

Note: The -start and -sstart options should not be used for submitted jobs. These options close the job log file, which causes the submitted job to end immediately.

You can issue other combinations of standard server control parameters by replacing the option in one of the examples above with another "edastart" option, such as -stop, -show, -traceon, and -traceoff.

CL and CMD Programs

The process of installing a server will also create and compile CL and CMD sources so that server functions such as start, stop, show and tracing may be activated on the OS/400 menu command line. The start command starts the server as a batch job issued to a specified job queue, and is particularly useful for automatically starting a server at boot time or with minimal effort.

The source is created and permanently assigned to a configuration's bin directory, then copied into QTEMP and compiled. If the ID being used to install the server has an explicit current library, the compiled programs will reside in *CURLIB; otherwise, they will go to QGPL. The user ID should have a current library (CURLIB). The core EDASTART program is generic for any installation and is driven by the defaults within the command files. If you want to have more than one configuration, use separate libraries or rename the programs to prevent overwriting.

The basic commands and functions are listed in the table below.

Command	Function
ISTART	`edastart`
ISTOP	`edastart -stop`
ISHOW	`edastart -show`
ITRCON	`edastart -traceon`
ITRCOFF	`edastart -traceoff`
ICLEAR	`edastart -clear`

To use any of the commands, type the command at the OS/400 Menu command line. You may change any of the following settings by using the OS/400 F4 Prompt mode:

- EDACONF Directory EDASTART Parameter
- Subsystem Name
- Subsystem Library Name
- Language ID
- Country ID
- Coded Character Set ID
- Job Name Prefix

The CL and CMD script may be further customized, or the defaults may be changed, by manually copying the desired file to a library and then changing and recompiling it. Detailed instructions for all steps are contained within the EDASTART CL source. Configuration of a particular language on the Web Console does not currently change the defaults with the file sources; these must be changed manually.

Troubleshooting Safe Mode

If the Server starts in safe mode normal use of the server is disabled. However the administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the HOME page. Click the fix hyperlink listed under the problem and make the correction. Save and restart the server. A common reason for the server to start in safe mode is that the server_admin_password is not correct.

If the server administrator does not have a password a secured server will always start in safe mode. To correct this a password will need to be added for this ID on the operating system.

Accessing IFS Files and QSYS Libraries

The location of FOCEXEC, MASTER, and FOCUS application files starting with release 5.x may be QSYS, IFS, or both. IFS is the preferred location, and is the location used for files created by the HTTP Web Console.

Syntax How to Use Conventions for IFS

IFS access follows the standards of a number of other platforms for EDAPATH, FILEDEF, USE, and APPS, but is most like UNIX because the file names follow the same rules. The following is a summary of the respective commands and conventions.

```
SET EDAPATH = directory  [: directory ]

FILEDEF ddname DISK filename [ ( options ]

USE
filename [AS name ]
END

APP MAP MYAPP directory
```

where:

directory

Is the full path directory name (for example, /home/iadmin/acctng).

ddname

Is the reference name for the file being opened.

filename

Is either the relative or full path file name (for example, myfile.dat, acctng/myfile.dat or /home/iadmin/acctng/myfile.dat).

options

Are the available access options such as LRECL or RECFM.

name

Is the alternate name for the Master File.

Use of a relative path name is not recommended, since this varies with any given connection to the server. Use of environment variables or shortcuts (for example, $HOME or ~) are not supported in any context.

Using Conventions for QSYS

QSYS access works with libraries and has the following EDAPATH, FILEDEF, and USE support for accessing existing applications.

The EDAPATH command is used to access IFS. It is also used to access QSYS Libraries with an IFS style of references. The option to use IFS references to QSYS Libraries is a native feature of OS/400. IFS references to QSYS names, such MYLIB, use IFS style references such as /QSYS.LIB/MYLIB.LIB, which are clearly recognizable as a QSYS reference. IFS QSYS references used in EDAPATH or APP MAP must be capitalized for proper utilization.

EDAPATH searches recognize these QSYS type of specifications and make the application library members (for example, EDAMAS(*), EDAACX(*), FOCEXEC(*)) available.

Example Accessing QSYS Libraries

For instance, if accounting and shipping libraries, respectively named ACCTNG and SHIP, were created from applications built with Version 4.3.1, you would access them by issuing the following:

```
SET EDAPATH = /QSYS.LIB/ACCTNG.LIB : /QSYS.LIB/SHIP.LIB
```

The FILEDEF syntax to used access files that were created as single member source physical files of a QSYS Library is:

```
FILEDEF ddname DISK library/file
```

Note: The source physical does not need to pre-exist for file creation purposes.

The FILEDEF syntax used to access files that were created as members in a source physical file of a QSYS Library is:

```
FILEDEF ddname DISK library/file(member)
```

The source physical needs to pre-exist for file creation purposes.

The USE syntax used to access FOCUS database files, created as members in a source physical file starting with "F$" of a QSYS Library, is

```
USE
library/file(member name) [AS name ] [NEW]
END
```

where:

member name

Is assumed as the FOCUS file name unless an AS phrase is explicitly issued. If the member name is left off the specification, then the member and file name are assumed to be the same. The NEW option allows new files to be created if they do not exist already.

This construction allows you to organize multiple FOCUS data sources within a single QSYS source physical name with a functionally name, such as FOCUS, ACCTG, SHIPPING, AR, or AP; or as individual QSYS source physical names, such as SHIP(SHIP), AR(AR), AP(AP), or SHIP(FOCUS).

Prior 3.x and 4.x Versions created FOCUS databases with an arbitrary "F$" added to the beginning of the source physical name and used "FOCUS" as the member name. Therefore, the name on the disk was in the form CURLIB/F$MYDB(FOCUS). The 5.x release does not assume this is a default, and therefore requires either a USE command with an explicit AS; or that the files are renamed to fit the 5.x conventions.

The source physical does not need to pre-exist for file creation purposes.

The APP MAP command supports use of IFS QSYS Library references for path search purposes in applications, however, the contents of a QSYS mapping are not available from the Web Console.

Reference **Environment Variables**

EDAPATH may also be set as an environment variable before server startup using appropriate syntax for WRKENVVAR or OSH export and a list of desired (colon separated) directories.

Creating JD Edwards Metadata

Creation of JD Edwards Metadata requires the use of the following iWay tools: AUTOTOOL and JDECONV. These tools are available on a separate CD entitled *iWay 5.2 Tools*. The output from these tools will be in QSYS. You need to either map to this location or copy the files to an IFS location.

CHAPTER 7

Server Installation for OpenVMS

Topics:

- Installation Requirements
- Software Availability
- Installing the Server
- Verifying the Server Installation
- Configuring the Server with Different Security Modes
- General Server Startup and Use
- Troubleshooting Safe Mode

These topics describe the requirements and procedures for proper installation of the Server for OpenVMS.

Installation Requirements

Before beginning server installation, review the following requirements:

- Supported Platforms and Operating Systems
- Disk Space Requirements
- Memory Usage
- Workspace Manager Shared Memory Resources
- Communications Requirements
- Creating User IDs

Supported Platforms and Operating Systems

The following table lists supported platforms and operating system releases. Confirm that the platform and the intended operating system release are supported combinations on the chart, and that the label on the actual media indicates the correct software.

Hardware / Operating System Vendor	Operating System Release	CD-ROM Label
OpenVMS for Alpha	7.1	OpenVMS V7.1
	7.2-2 (Not 7.2 or 7.2-1)	OpenVMS V7.2-2
	7.3-1	OpenVMS V7.3-1

The software also supports a range of data adapters for ADABAS/C, Oracle, Progress, RDB and RMS; see the DBMS support chart for specific combinations on any given platform. Specific DBMS information (such as release levels, user IDs, and passwords) is not used during the basic installation, but will be used later during configuration.

Reference Operating System Required Patches

OpenVMS requires certain operating system patches to install and run a server. The chart below is based on operating system release levels.

OpenVMS 7.1 Patches	OpenVMS 7.2-2 Patches	OpenVMS 7.3-1 Patches
ALPBASE02_071	VMS722_UPDATE V 1.0	VMS731_RMS V2.0
ALPF11X03_071	VMS722_LAN V3.0	Compaq TCP/IP Services V5.3 ECO 1
ALPSYSA02_071	VMS722_RMS V4.0	
ALPSYSB02_071	VMS722_PTHREAD V1.0	
ALPPORTS01_071	Compaq TCP/IP Services V5.3 ECO 1	
ALPDCL01_071		
ALPMONT02_071		
ALPBACK04_071		
ALPDISM01_071		
ALPINIT01_071		
ALPMTAA01_071		
ALPACRT06_071		
ALPDRIV11_071		
ALPMOUN07_071		
ALPSHAD06_071		
ALPBACK05_071		
ALPPTHR02_071		
Digital TCP/IP Services V4.2 ECO 5		

Third party TCP/IP packages from Process Software have also been tested at the Multinet 4.4 and TCPWare 5.6 levels for basic connect and data retrieval, and are known to be operational and require no special configuration. If you have a problem using third party

TCP/IP products, be sure to specify the product, the release, and any installed patches when contacting Customer Support.

Disk Space Requirements

The following are approximate disk space requirements. Specific sizes may vary slightly according to the options that were selected during configuration. The usage numbers do not include space for actual applications, databases, sort space, output preparation, or logs.

Platform	Version	After Install
OpenVMS for Alpha	7.1	260000 blocks
	7.2-2	270000 blocks
	7.3-1	280000 blocks

Memory Usage

Memory usage in a configured environment is determined by the following factors:

- Workspace Manager.
- Listeners.
- Concurrently running application agents.

Actual memory usage varies depending on the features used by the application, and will increase or decrease as agents change between active and idle states.

Workspace Manager Shared Memory Resources

The Workspace Manager makes use of a specific system resource known as shared memory. Each individually configured Full-Function Server with or without Data Adapters uses one shared memory. The size of this memory varies based upon the sizes of the agents table and the queue.

Generally, shared memory use does not require special configuration; it is just a resource that system administrators like to know is being used so they can monitor it with the SHOW MEMORY/POOLED command (non-paged section).

Communications Requirements

The TCP/IP Transport protocol is supported on all platforms and is the primary method of communications between iWay-enabled connector applications and iWay servers.

The System Administrator should make sure that TCP/IP is communicating properly by using the ping command between the desired platforms.

Up to 4 consecutive open ports for each server you want to run will be used. The starting port number (of the consecutive ports) is required during the installation process, since the initial installation also yields an initial configuration.

Creating User IDs

The installation of an iWay server requires an ID to install and own the files as well as to administer the server; this is also known as the "iadmin ID". The same ID should be used for both functions (installation and administration) and should not be the SYSTEM ID. The iadmin ID is an any user ID with a set of privileges and quotas for secured or non-secured mode. Running the server in secured mode will require more privileges than running in non-secured mode. If you are planning to run a secured server, see *Configuring the Server with Different Security Modes* on page 7-14 and configure for that mode at this time.

The iadmin privileges for non-secured servers are:

Privilege	Function	Required for Use of
NETMBX	May create network device	Mailboxes
PRMGBL	May create permanent global sections	IPC Shared Memory
PRMMBX	May create permanent mailbox	IPC Control Pipes
SYSGBL	May create system wide global sections	IPC Shared Memory
SYSNAM	May insert in system logical name table	IPC Control Pipes
TMPMBX	May create temporary mailbox	Mailboxes
SYSLCK	May lock system wide resources	Progress Data Adaptor only

Any additional privileges required by particular underlying databases must also be authorized.

Running OpenVMS servers in secured mode is always recommended. This is because non-secured servers run as the privileged account and connecting end-users requests run as the privileged iadmin account, thus presenting a security risk. Non-secured mode should only be used when adequate safeguards have been taken so that the required privileges do not present a risk, or for short periods of time only (such as while debugging an issue).

The following OpenVMS minimal quota resources are also required:

Quota Resources	Value
PAGE_FILE	125000
BUFFER_LIMIT	100000
IO_BUFFERED	200
IO_DIRECT	200
AST_LIMIT	300
QUEUE_LIMIT	50
PRIORITY	4
WORKING_SET	3076
MAXIMUM_WORKING_SET	8192
EXTENT	10240
FILE_LIMIT	300
ENQUEUE_LIMIT	2000
JOB_TABLE_QUOTA	10000

Note: The IMPERSONATE privilege (one of the requirements for secured mode operation) allows dynamic setting of quota levels and uses the above table of values. If the configuration is run in secured mode, the initial default values for server validation purposes need not be a concern unless the defaults are unusually low.

End-users connecting to a server will also require an ID with specific set up for access. See *End-User Requirements* on page 7-18 for details.

Note: The iadmin ID should only be available to users who require administrative privileges to the server for security purposes.

Software Availability

The software is available only on CD-ROM, in OSD-2 format.

Installing the Server

For performance reasons, you should not install or access the software using FSD or NFS-mounted disks; a directly connected disk or cluster disk is always preferred.

1. The following steps detail the procedure for installation. Log on with the iadmin user ID.
2. Set the default protection mask to minimally read/execute (if it has not already been set this way). For example:

   ```
   $ SET PROTECTION=(S:RWED,O:RWED,G:RE,W:RE)/DEFAULT
   ```

   The installation procedure may be run from any directory; you do not need to set the default to that directory provided the full path name is used. Ensure that you have write privileges to the directory on which you are running the command. To test this, enter the following:

   ```
   $ CREATE [.XXX] /DIRECTORY
   ```

Mounting the Software CD

To make the software on the CD accessible to the user performing the actual installation, the media can be mounted and either:

- the set up program can be directly accessed, or
- the contents can be copied to disk for future access.

To mount the software, insert the CD into the CD-ROM drive and issue the following command:

```
MOUNT /OVER=ID device_name:
```

where:

device_name

Is the system name for your CD-ROM device. Consult your OpenVMS System Administrator for the name of the device for your platform.

The CD will now be accessible for the ID doing the actual installation and will have a root directory of

```
[IWAY]
```

The actual installation process does not require copying any files to disk before running the set up program; you can access the program directly from the CD. However, it may be advantageous to copy all files to disk in order to speed installation.

Starting the Setup Procedure

The installation procedure name is called ISETUP. Run it using the appropriate full path name to the CD-ROM location (or where ever the procedure resides on the disk).

The ISETUP program requires a license key (see the shipping manifest for the actual key) plus a few basic parameters. The ID being used to install the software is the server administrator ID (iadmin); its password is prompted for and required for certain operations. All other parameters have defaults and are displayed. Responding yes to this list of defaults skips the process to the final confirmation step; otherwise, you are prompted individually for each of the values.

NLS on a server is set to "off" by default. It is configured using the Web Console as of 5.2.x (unlike previous releases, which required individual prompting for NLS values during ISETUP).

The parameters are:

Parameter	Description
License Key	Installation Key (actual key will be on shipping documents).
EDAHOME	IFS directory location for files. Any changes in the EDAHOME location must follow the pattern *ibi.srv52*.home* in its declaration.
EDACONF	Location for the default configuration. The default value is based on the license key and any change in the EDAHOME directory pattern. The default will be a sibling directory to the EDAHOME directory in terms of its location, and will have a name such as ffs, wfm, etl, spg or wfs (based on the key and on any change in the EDAHOME pattern). When EDASTART is used to control the server, if the full path name of the EDACONF directory exceeds 31 characters, the directory is automatically aliased as EDASHARE=EDA*n* where *n* is the TCP port number of the server. When aliasing occurs, a message similar to the following is displayed: `Warning: WSM id 'DISK$SOFTWARE:[IWAY.IBI.SRV52.FFS] has been aliased to EDASHARE=EDA8100 due to length.` In 5.1 releases, EDASHARE had to be declared manually. Manual declarations will continue to be respected. However, we recommend removing manual declarations.
APPROOT	Location for default applications and sample applications.

Parameter	Description
Server Admin Password	Server Administrator password. There is no default.
TCP Base Port	The port number on which the server's TCP Listener listens. It is also the start of the set of port numbers used by the server for other TCP based services.

Example Installing and Starting a Full-Function Server

The example below shows a Full-Function Server installation using the defaults. The prompts are self-explanatory.

From the OpenVMS command prompt:

```
$ RUN CDROM:[IWAY]ISETUP

--------------------------------------------------------------------------------

                  Welcome to the Product Set Up Facility
     Please respond to the prompts or enter Q to quit at any prompt.

--------------------------------------------------------------------------------

Select an options:

   1. Install and Configure
   2. Add Additional Configuration Instance
   3. Refresh Installation (Reinstall, Keep Configurations)
   4. Install Debuggables to the Installation Directory

Enter a selection (Default=1) : 1

--------------------------------------------------------------------------------

Enter your License Key (Format 999-999-9999) :   xxx-xxx-xxxx

   License Key has been checked

   Product: Full Function Server
   Maximum Number of Users: 2
   Maximum Number of CPUs: 2

ISETUP: License xxx-xxx-xxxx has been accepted

--------------------------------------------------------------------------------
```

```
Please enter the full path name of the media for the product

(Default=CDROM:[IWAY]iserver.bck)

Please supply media or <Enter> :

-------------------------------------------------------------------------

Enter the Server Administrator (IADMIN) Password: XXXXXXX

-------------------------------------------------------------------------

Please review the default settings.

EDAHOME = IWAY:[iadmin.ibi.srv52.home]
EDACONF = IWAY:[iadmin.ibi.srv52.ffs]
APPROOT = IWAY:[iadmin.ibi.apps]
TCP_BASE_PORT = 8100

If you are satisfied with the default settings you may proceed to
final confirmation else you will be prompted for individual values.
Proceed with defaults? (Y/N Default=Y)        :  y

The following selections have been made for ...

Install Options ...
   INSTALLATION_DEVICE = /cdrom/iserver.tar
   PRODUCT = server
   EDAHOME = IWAY:[iadmin.ibi.srv52.home]

Configure Options ...
   EDACONF = IWAY:[iadmin.ibi.srv52.ffs]
   EDAHOME = IWAY:[iadmin.ibi.srv52.home]
   LICENSE = xxx-xxx-xxxx
   APPROOT = IWAY:[iadmin.ibi.apps]
   SERVER_TYPE = ffs
   SERVER_NAME = "IWAY 52 Full Function Server"
   SERVER_ADMIN_ID = iadmin
   SERVER_ADMIN_PASSWORD = ECECC5B1F12E735A
   TCP_BASE_PORT = 8100

Please confirm these values with one of the following responses ...

   Y = Accept and Proceed
   N = Start Over
   Q = Quit

Please supply confirmation: Y
```

```
Please, wait while we are installing the server ...

ISETUP: Installation Step completed

Please, wait while we are configuring the server ...

ISETUP: Configuration Step completed

------------------------------------------------------------------------

Would you like to start the server (Y/N Default=Y)? : Y

ISETUP: The server has been started

------------------------------------------------------------------------

To administer the server go to a web browser
and open the URL http://myhost.mycompany.com:8101

$
```

If you are satisfied with the selections, answer yes to the final prompt and wait for the return of the command prompt before proceeding to the next step.

If any of the target locations exist, they will be marked with "(*EXISTS*)" on the display line. This gives you the opportunity to change a location if you do not want to overwrite it by changing the default values.

If you decide to change a default, you will be prompted for the individual values. However, you must follow some rules about directory locations. The default root location is the iadmin user ID home directory. The EDAHOME directory path name is locked into the pattern *ibi.srv52*.home*. If you change EDAHOME, EDACONF follows the change in the pattern. The EDACONF may also be changed, but it is locked into a similar pattern (except for the lowest portion of the EDACONF directory name, which reflects the type of server).

Your software is now installed along with an initial configuration.

Configuring an Additional Server

If you have additional licenses and need to configure an additional server, log on with the iadmin ID and run EDAHOME [.BIN]ISETUP.EXE, where EDAHOME is the directory on which the software was installed ([.IBI.SRV52.HOME] by default). At the main menu, select option 2, Add Additional Configuration Instance.

The prompts for adding a configuration are similar to those for an installation, but EDAHOME is the directory where the software was originally installed. Typically, you would not want to accept the defaults, as doing so will cause your current configuration will be overwritten. If the supplied EDACONF already exists, the installation will copy it to a directory called BACKUP.

Refreshing an Installation

Sometimes it is desirable to refresh the server software's installation directory (EDAHOME) because it has become accidentally damaged, polluted with unwanted files, or needs updating with a service pack. To do this, run the ISETUP program on the CD-ROM from which the software was originally installed, or from a service pack CD-ROM. At the main menu, select option 3, Refresh Installation (Reinstall, Keep Configuration). This refreshes programming files under the server installation directory (EDAHOME) and does not affect any configuration directories. The complete directory tree (EDAHOME) and library (EDAHOMELIB) are removed and re-created; if any files need to be retained, they should be copied elsewhere beforehand.

Debuggable Version

As with any complex software product, there is sometimes a need to produce traces and other information in order to identify problems; thus debuggable software is needed. Whether the original software CD-ROM has these debuggables is generally dependent on disk space. The debuggable version should not be installed and activated unless explicitly requested by customer support for problem resolution. If a separate CD-ROM is required, it will be shipped as needed. When necessary, install the debuggable version by running ISETUP from the appropriate CD-ROM and selecting option 4, Install Debuggables to the Installation Directory, from the main menu.

Dismounting the Software CD

When you have finished accessing the CD-ROM, dismount it with the following command:

```
DISMOUNT device_name:
```

where:

device_name:

Is the device name used in the original mount command.

Normally the CD-ROM will not be needed again unless a support situation requires debuggable versions of the software to be installed. A set of debuggables matching the original software is on the CD-ROM for this purpose. You will also need the CD-ROM if you refresh the installation.

Verifying the Server Installation

To test the installation, use the initial configuration created during installation. The server may be brought up, checked, connected to, tested, disconnected, and shut down using the following steps.

1. Log on with the iadmin user ID.
2. Activate the account privileges (if they are not already activated) with:

   ```
   SET PROCESS /PRIV=ALL
   ```

3. Start the server with the appropriate path to edastart and the -start option

   ```
   @IWAY:[IADMIN.IBI.SRV52.FFS.BIN]EDASTART.COM -START
   ```

4. Check to see whether the processes are active using -show

   ```
   @IWAY:[IADMIN.IBI.SRV52.FFS.BIN]EDASTART.COM -SHOW
   ```

5. Start the Web Console by starting a browser pointed at the Listener Port of the server. The URL format is http://host:port. For example, for the iWay Server, the URL is: http://host:8101; for the WebFOCUS server, the URL is http://host:8121 (if the default ports were used during installation). The actual Listener Port number is one higher than the TCP Listener Port specified during the installation.
6. If the server is running in secured mode, you will receive a logon screen. Log on with the iadmin user ID.
7. The home page of the Web Console will open. The home page is arranged in a menu-like context for the various features it supports. Use of the server admin ID (iadmin) to log on will display server administration features that non admin IDs would not normally see.

   Information on how to use the Web Console is available as a drill-down on the console itself and in the *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.
8. The home page has a drill-down for testing the server. Click the test drill-down to run a sample report.
9. If you are done using the server, use the Stop Server drill-down on the Web Console Menu.
10. If there are startup problems, examine the IWAY:[IADMIN.IBI.SRV52.FFS]EDAPRINT.LOG file.

Configuring the Server with Different Security Modes

There are three security modes for a Server.

1. Security OFF. This is the default unless security was configured.
2. Security ON. With security ON, users must either send a password to connect to the server or use some other form of verification.
3. Security WCPROTECT. With security WCPROTECT, users are not verified against the operating system, but will be verified against the edaserve.cfg file when logging into the Web Console.

Each of these security options can be set with the EDAEXTSEC variable, as follows.

```
DEFINE EDAEXTSEC {ON|OFF|WCPROTECT}
```

The default is OFF unless the server has been configured for Secured Mode, as described below; then the default is ON.

Configuring the Server for Secured Mode

In order to run the server with security on, various privileges are required (depending upon the ID being used to connect to the server).

Reference **Server ID (iadmin) Requirements**

To connect to the server, users must either send a password or use some other form of verification. While actual installation can be done by an ordinary user, the changes listed here require the SYSTEM ID.

Run MCR AUTHORIZE to add the following privileges to the iadmin ID.

Privilege	Function	Required for Use of
CMKRNL	May change mode to kernel	Server impersonation features
IMPERSONATE	May impersonate another user	Server impersonation features
NETMBX	May create network device	Mailboxes *
PRMGBL	May create permanent global sections	IPC Shared Memory *
PRMMBX	May create permanent mailbox	IPC Control Pipes *

Privilege	Function	Required for Use of
SYSGBL	May create system wide global sections	IPC Shared Memory *
SYSNAM	May insert in system logical name table	IPC Control Pipes *
SYSPRV	May access objects using system protection	Server security features
TMPMBX	May create temporary mailbox	Mailboxes *
WORLD	May affect other processes in the world	Control of impersonated processes
SYSLCK	May lock system wide resources	Progress Data Adaptor only *

* Also required for non-secured servers.

Any additional privileges or changes in quota required by particular underlying databases must also be authorized and customized in the EDAENV.PRM file, as described in *How to Add/Change Privileges and Quotas (EDAENV.PRM)* on page 7-15.

The **default minimal quota resources** are also contained in the default EDAENV.PRM file. You do not need to have values explicitly declared in the UAF or SYSTEM tables, provided the iadmin user ID has IMPERSONATE privileges. However, some situations may require quotas to be increased (for instance, if there are problems accessing very large databases). This is also done by customizing the EDAENV.PRM file, as described below.

Procedure **How to Add/Change Privileges and Quotas (EDAENV.PRM)**

You can create privilege and quota settings using a configuration file (EDAENV.PRM). To customize the settings:

- Copy the default EDAHOME [.BIN]EDAENV.PRM file to EDACONF [.BIN].
- Edit and customize the EDACONF [.BIN]EDAENV.PRM file as needed (for edit rules, see below).
- Recycle the server.
- Repeat as needed until the desired affect is achieved (until the page file quota is large enough to access files).

EDAENV.PRM edit rules:

Changing quota values are simply edited values.

To add a quota, use the form name=value with one declaration per line. Actual names follow the standard OpenVMS names for resources.

Privilege declarations lines have the format Privilege_n : privilege [, privilege, ...], where n is any integer from 1 to 99. The value for n must be unique among the Privilege_n lines. Any number of comma-separated privilege names per line may be declared, but each Privilege_n line must be on separate lines. Privilege names follow the standard OpenVMS names for these privileges.

The EDAENV.PRM file should not be confused with the EDAENV.COM file, which is used for running additional OpenVMS commands (typically logical declarations) at startup. An example of EDAENV.PRM follows:

```
io_direct = 200
queue_limit = 50
page_file = 125000
buffer_limit = 100000
io_buffered = 200
ast_limit = 300
working_set = 3076
maximum_working_set = 8192
extent = 10240
file_limit = 300
enqueue_limit = 2000
job_table_quota = 10000
priority = 4
privilege_1 : TMPMBX, NETMBX, PRMMBX
privilege_2 : PRMGBL, SYSGBL, SYSNAM
privilege_3 : SYSPRV, CMKRNL, WORLD
privilege_4 : SYSLCK, IMPERSONATE
```

Procedure How to Configure the Server for WCPROTECT Mode

1. Prior to starting the server, issue the variable EDAEXTSEC as follows:

   ```
   DEFINE EDAEXTSEC WCPROTECT
   ```

2. Start the server.

A user will only be authenticated when connecting to the Web Console. Only the ID and Password in the edaserve.cfg will have administrative access to the server.

General Server Startup and Use

After configuring for secured mode (if desired), the server is started and managed using the same server startup and Web Console startup steps used for validating the server (steps 1 - 6 in the*Verifying the Server Installation* on page 7-13). If the server has not been configured for adapters, now is an appropriate time to do so using the Web Console and *iWay Server Administration for UNIX, Windows NT, OpenVMS, OS/400, OS/390 and z/OS* manual.

Commonly used edastart options and functions are as follows:

Command and Option	Function
`edastart`	(No parameters) Starts the server with the line mode console to actively view the server log (edaprint). Also allows dynamically issuing edastart options, such as show, traceon, traceoff, quit, and stop. Use Ctrl+C to receive the console command prompt to enter commands.
`edastart -start`	Starts the server in background; only a short message appears.
`edastart -sstart n`	Starts the server, but waits n seconds for actual startup.
`edastart -show`	Shows general status of the server and agents.
`edastart -stop`	Stops the server.
`edastart -quit`	Exits the server's line mode console log (edaprint) and returns to the operating system command prompt, but leaves the server running.
`edastart -console`	Reenters the server's line mode console log (edaprint).
`edastart -traceon`	Turns on tracing. May be used at initial startup or after start. Tracing should not be turned on (due to overhead) unless there is a problem that needs to be traced. It is always preferable to start traces at initial startup time unless instructed otherwise.
`edastart -traceoff`	Turns off tracing.
`edastart -?`	Displays edastart options (those on this list, and more).
`edastart -?s`	Displays support information and support-related options.

Adding JOB, GROUP or Other Defined Environment Values (EDAENV.COM)

At server startup, all Process level logicals are copied to the startup job stream; System level logicals are present by default. If a server must be configured to "see" Job or Group level logicals, or there are Process level logicals that should only be declared for the server, they must be individually declared in an EDACONF [.BIN]EDAENV.COM file. The contents of this file must be valid DCL syntax (typically just consisting of logical declarations). An example of EDAENV.COM follows:

```
$ DEFINE /GROUP ORASID MYORASID
```

End-User Requirements

End-user IDs connecting to a server (secured or unsecured) have requirements in terms of privileges, and require specific setup.

The privilege requirements are as follows:

Privilege	Function	Required for Use of
NETMBX	May create network device	Mailboxes
TMPMBX	May create temporary mailbox	Mailboxes
SYSLCK	May lock system wide resources	Progress Data Adaptor only

The ID setup requirements are as follows:

- Logons must have a UIC group associated with the ID (so the calls for ID information under OpenVMS 7.x are returned in standard OpenVMS 6.x [group,member] format).
- An end-user ID must have QUOTA on the same disk where the server writes its temp files (typically EDACONF [.EDATEMP]).

To check the UIC, issue the following syntax:

```
WRITE SYS$OUTPUT F$USER()
```

Troubleshooting Safe Mode

If the Server starts in safe mode normal use of the server is disabled. However the administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the HOME page. Click the fix hyperlink listed under the problem and make the correction. Save and restart the server. A common reason for the server to start in safe mode is that the server_admin_password is not correct.

If the server administrator does not have a password a secured server will always start in safe mode. To correct this a password will need to be added for this ID on the operating system.

CHAPTER 8

Server Installation for VM

Topics:

- Operating System Release Levels
- Disk Space Requirements
- Installation Overview
- Installation Worksheet
- Installation Personnel
- Requirements for TCP/IP
- Installing the Server

This document describes the requirements and procedures for proper installation of the server software for VM. The process is described in two parts:

- **Installation.** Installation involves several required and optional steps. These include unloading the tape onto the disk (referred to as the maintenance disk); executing the GENEDAVM EXEC, which installs the NSS segments and copies the run-time files onto another disk (referred to as the production disk); linking the data adapter(s) used at your site; and optionally configuring Resource Governor and National Language Support.
- **Configuration.** Each client connecting to a Server for VM connects to a separate *server instance*. A server instance is a VM ID configured for TCP/IP communications. The steps you follow to configure a server instance depend on the protocol used at your site. See the *iWay Server Configuration for VM* manual for details.

  Note: The 5.x release of the Server for VM only supports the TCP/IP protocol. The LU2 and LU6.2 protocols are not supported.

Operating System Release Levels

The server runs on all VM operating system release levels supported by IBM.

Note: The server does not run in VM/ESA 370 mode.

Disk Space Requirements

The total disk space requirements for the server are summarized below.

Disk Type	3380 (in Cylinders)	3390 (in Cylinders)
Production	130	110
Maintenance (Version 5 Release 2 and higher)	275	225

The Production Disk

After installation, the server production minidisk will contain an executable copy of the server. This is the disk to which all server IDs must be linked when they start the server. It contains all the files necessary for running the server.

Most of the files on this disk are created by the CMS EXECs that generate the installed version of the server (which includes, for example, the server load modules and the text of server error messages). You can add your own locally created files, such as the text of user-written subroutines, or CMS EXECs of interest to users. The files created by the installation procedure on the production disk may vary from version to version.

The software does not explicitly use the CMS label for the production disk. However, we suggest that you use IWP as the label for the production disk of the current version of the server to which all users should be linked by default. If more than one version of the server is installed, we suggest a descriptive label for the server production disk, such as

`IWP`*`nnn`*

where:

`nnn`

Represents the version, release, and maintenance level. For example, IWP520 for the production disk of Version 5, Release 2, Maintenance Level 0 (5.2.0).

The Maintenance Disk

The maintenance disk is the CMS minidisk onto which you unload the distribution tape. Initially this disk should be empty; you should not store any other files on it.

Important: You must have different maintenance disks for different server versions. This requirement is critical. You may generate a defective copy of the server if you load the maintenance tape for one version onto the maintenance disk for another version.

When you phase out an older server version and want to reuse its maintenance disk for the next version, you must erase all the files on it. A simple way to do this is to use the CMS FORMAT command. It erases all of the files on the disk, and assigns a CMS label to it. Although you can label the disk any way you like, we suggest a name such as

`IWM`*`nnn`*

where:

`nnn`

Is the version, release, and maintenance level. For example, IWM510 for the maintenance disk of Version 5, Release 2, Maintenance Level 0 (5.2.0).

Note:

- When calling for support, always specify whether you are referring to an issue with the production disk or the maintenance disk.
- Client applications and servers should access only the current production disk, not the maintenance disk.

Installation Overview

Installation of the Server for VM requires planning and coordination. The following is an overview of the tasks you must complete to successfully install the VM server.

1. Review hardware and software requirements as described in this chapter.
2. Fill out the information requested in the Installation Worksheet, below.

Installation Worksheet

The information requested on the following worksheet applies to your hardware and software environment and will help you during the installation procedure. It may also be useful for reference in the future, when you update your server software or tune your operating system.

1. Which release and PUT level of VM and network software will be used to support the Server for VM?

_____VM _____VTAM _____TCP/IP

2. Which security subsystem, if any, is used on the server?

_____CA-ACF2 _____VMSECURE _____Other

_____RACF _____CA-TOPSECRET

3. Which types of mainframe data sources are available and how will they be accessed?

	Data Source	Read Only	Read/Write
_____	ADABAS	_____	_____
_____	FOCUS	_____	_____
_____	NOMAD	_____	_____
_____	SQL/DS	_____	_____
_____	VSAM	_____	_____

Installation Personnel

The following personnel are needed to install the Server for VM:

Network Systems Programmer	Describes the network layout, defines the VTAM node definitions for the Server for VM, and sets up the AVS virtual machine for TCP/IP communications.
VM Systems Programmer	Performs the installation of the Data Access Engine and data adapters. Optionally, this programmer also installs National Language Support.

The following general requirements are necessary in order to configure the server:

1. One user ID for the Attach Manager. This ID requires:
   - Class "B" and "E" privilege.
   - IUCV allow.
2. One user ID for the server. This ID requires:
   - Class "G" privilege.
   - IUCV allow.
   - XAutolog.

Requirements for TCP/IP

The following sections describe the hardware and software requirements for configuring a server for the TCP/IP communications protocol.

Hardware Requirements

To install a server using TCP/IP, you need any one of the following network processors and associated components:

- IBM 3172 Interconnect Controller Model 001, 002, or 003.
- IBM 8232 LAN Channel Station.
- IBM 3720 or 3745 Communications Controller.
- HYPERchannel A220 Processor Adapter 42990007.

Software Requirements

The following software must be functional on your mainframe before you can install and operate the server using TCP/IP:

- A VM operating system release level supported by IBM.
- IBM TCP/IP for VM Version 2 Release 3 or higher.
- Server Communications Protocol Interface for TCP/IP.
- A unique service port designation for the Server for VM.

Installing the Server

This list outlines the steps in the server installation procedure. Certain steps are optional depending on your site requirements; these are noted.

1. Unload the server distribution tape onto the maintenance disk. See *How to Unload the Distribution Tape* on page 8-7.
2. Modify the EDADFSEG EXEC. See *How to Modify the EDADFSEG EXEC File (Optional)* on page 8-7.
3. Generate the server. See *How to Generate the Server* on page 8-9.
4. Install the applicable data adapter(s).

Once you have completed the above steps, you can proceed to the *iWay Server Configuration for VM* manual for instructions on setting up your server for TCP/IP communications.

Procedure How to Unload the Distribution Tape

The distribution tape is an unlabeled 1600 or 6250 BPI 9-track tape, or a 3480 cartridge, created by the VMFPLC2 command.

Note: The National Language Support (NLS) feature enables your site to provide messages in a variety of languages. The scope of NLS support (messages, data display, menus, and help files) varies from language to language. Contact your software representative for details on the support provided for a particular language.

1. Mount the tape on a 1600 BPI drive as virtual 181, or mount the cartridge on a 3480 drive as virtual 181.
2. Access the maintenance disk as your A disk, in read/write mode.
3. Issue the VMFPLC2 commands to unload all the files from the tape or cartridge onto the maintenance disk:

```
VMFPLC2 LOAD * * A

VMFPLC2 REW

VMFPLC2 FSF 2

VMFPLC2 LOAD * * A
```

4. If you are implementing NLS and using a 6250 BPI tape, issue the following commands immediately after unloading the files from the distribution tape:

```
VMFPLC2 REW

VMFPLC2 FSF 6

VMFPLC2 LOAD * * A
```

5. Once the tape or cartridge is unloaded, detach virtual 181.

Procedure How to Modify the EDADFSEG EXEC File (Optional)

The EDADFSEG EXEC defines the TRW, HLI, DLL, and RLM NSS segments to VM. By default, the NSS segments are called TRWSEGXA, HLISEGXA, DLLSEGXA, and RLMSEGXA.

The shared part of each NSS segment is defined by the SR attribute of the DEFSEG command; the nonshared part is defined by one or more EW attributes.

In this step, you may optionally modify the sample EDADFSEG EXEC supplied on the server distribution tape. EDADFSEG EXEC is shown below.

Example Modifying EDADFSEG EXEC

The following copy of the EDADFSEG EXEC illustrates the current version of this routine. Note that it now contains four requirements, with the latest being TRWSEGXA:

```
/*--------------------------------------------------------------------*/
/* EDADFSEG EXEC              (c) Copyright IBI 1997                  */
/*--------------------------------------------------------------------*/
/**********************************************************************
     NSS names and addresses.

     TRW - Table, Report Writer segment
     HLI - Host Language interface
     DLL - Dynamic Load Libraries
     RLM - Run time load modules

     Please modify the next 4 pairs of statements with:
     -->  your chosen segment names
     -->  the addresses selected for the segments
**********************************************************************/
     trwname = 'TRWSEGXA'

     trwaddr = '2000-22FF SR 2300-25FF EW'

     hliname = 'HLISEGXA'
     hliaddr = '2600-26FF SR 2700-28FF EW'

     dllname = 'DLLSEGXA'
     dlladdr = '2900-2EFF SR 2F00-34FF EW'

     rlmname = 'RLMSEGXA'
     rlmaddr = '3500-37FF SR 3800-41FF EW'
/**********************************************************************
 * * * * * * End of user modifications * * * * * * * * * * * * * * *
**********************************************************************/
Address 'COMMAND'
Trace 'O'

'GLOBALV SELECT IBIGEN GET LOADNSHR'           /* get LOADNSHR setting */

'GLOBALV SELECT IBIGEN SET  TRWNAME' trwname
'GLOBALV SELECT IBIGEN SETL TRWADDR' trwaddr loadnshr

'GLOBALV SELECT IBIGEN SET  HLINAME' hliname
'GLOBALV SELECT IBIGEN SETL HLIADDR' hliaddr loadnshr

'GLOBALV SELECT IBIGEN SET  DLLNAME' dllname
'GLOBALV SELECT IBIGEN SETL DLLADDR' dlladdr loadnshr

'GLOBALV SELECT IBIGEN SET  RLMNAME' rlmname
'GLOBALV SELECT IBIGEN SETL RLMADDR' rlmaddr loadnshr

Exit 0
```

The above NSS segments must reside above the 16M line and may not overlay any other NSS used during a session or the execution of an HLI program.

During the installation procedure, the mode is checked and the appropriate values from the XA variables are used. Remember, the server does not support VM/ESA 370 mode.

Note: You can change the values TRWSEGXA, HLISEGXA, DLLSEGXA, and RLMSEGXA. You can also change the NSS addresses in the EDADFSEG EXEC, but do not change the size. The record format must remain F, and the record length must remain 80. Do not change any other lines in EDADFSEG EXEC.

Procedure How to Generate the Server

This step creates a core of server load modules on the production disk. The majority of code in the NSS segments is defined in *How to Modify the EDADFSEG EXEC File (Optional)* on page 8-7. This step also inserts your site code into the release information that appears. The GENEDAVM EXEC, which you execute in this step, installs the NSS segments and copies the run-time files onto the production disk.

Before completing the instructions below, log on to a virtual machine with Class E privilege. You cannot generate the server from a general user virtual machine with only Class G privilege.

1. Spool the console for documentation purposes by entering the following command:

   ```
   CP SPOOL CON START
   ```

2. Use the DEF STOR command to set the virtual machine size. Define storage (DEF STOR *xx*M) for your virtual machine to at least 10M higher than the ending address of the highest of the four segments. For example, referring to the EDADFSEG EXEC supplied, the highest ending address is 41FF (hex), which equates to 66 (decimal); therefore, storage should be set to 76M.

3. Set the machine mode by entering the following command:

   ```
   SET MACHINE ESA
   ```

   Note: The server does not support VM/ESA 370 mode.

4. IPL CMS by entering the following command:

   ```
   IPL CMS
   ```

5. Release all unused CMS minidisks, including minidisks that are not required for the installation of the server. The server maintenance disk and the CMS system disks are required. The maintenance disk must be accessed as A, in read/write mode. The CMS system disks will most likely be 190 and 19E, accessed as S and Y/S, respectively.

6. The Attach Manager ID needs the privilege DIAGPCHK.

7. Prior to executing the GENEDAVM EXEC, it is recommended that you issue the following command to allow the console to scroll automatically:

   ```
   CP TERM MORE 0 0 HOLD OFF
   ```

   If you do not enter this command, the screen will have to be cleared every time it becomes full of messages. To reset this setting, enter the following command:

   ```
   CP TERM MORE 50 10 HOLD ON
   ```

   Additionally, verify that the maintenance disk is accessed as the "A" disk in R/W mode, and that the production disk is accessed as the "C" disk in R/W mode.

   The NSS and other files needed by the server are generated by the GENEDAVM EXEC on the maintenance disk.

8. Execute the GENEDAVM EXEC:

   ```
   GENEDAVM
   ```

   The GENEDAVM EXEC writes messages to the terminal as it proceeds. If you receive any CMS error messages during this procedure (with the exception of "File Already Exists" messages), call Customer Support Service (CSS) or your software representative.

9. Close the terminal console spool by entering:

   ```
   CP SPOOL CON CLOSE STOP
   ```

   The terminal console input and output commands will be printed on a printer unless directed elsewhere by the CP SPOOL CON START command. Save this output for your own documentation and have it available if you call for support regarding installation problems.

Example Generating the Console Spool

The following is a sample console spool. It has been modified to show the most useful system prompts and user responses. User responses are in boldface type, to distinguish them from system prompts.

```
Ready; T=0.01/0.01 16:01:49
q stor
STORAGE = 0522112K
Ready; T=0.01/0.01 16:01:54
genedavm
->EDM191  333   A    R/W ( EDASQL 191 )
->EDP192  192   C    R/W ( EDASQL 192 )
  DSK190  190   S    R/O
  CMSLIB  19E   Y/S  R/O
+GENEDAVM Check the minidisks accessed.  Is it true that:
          The Product Maintenance Disk,
          is accessed as 'A' and in Read/Write mode
          The Product Production Support disk,
          is accessed as 'C' and in Read/Write mode
          Enter 'YES' to proceed. Any other response will stop this exec.
yes

+GENEDAVM Product Generation Phase I...
+GENEDAVM Generating Product Segment, Modules, and Execs...
Initializing...
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
Creating FUSELIB LOADLIB.
DMSXIN571I Creating new file:
DMSOPN002E File CLI TXTLIB * not found
DMSOPN002E File FUSELIB TXTLIB * not found
FUSELIB LOADLIB created successfully.
```

```
+GENEDAVM Defining the Product Support segment.
+GENEDAVM CP DEFSEG TRWSEGXA 2000-22FF SR 2300-27FF EW LOADNSHR
HCPNSD440I Saved segment TRWSEGXA was successfully defined in fileid 4177.
+GENEDAVM CP DEFSEG HLISEGXA 2800-28FF SR 2900-2AFF  EW LOADNSHR
HCPNSD440I Saved segment HLISEGXA was successfully defined in fileid 4178.
+GENEDAVM CP DEFSEG DLLSEGXA 2B00-31FF SR 3200-41FF EW LOADNSHR
HCPNSD440I Saved segment DLLSEGXA was successfully defined in fileid 4179.
+GENEDAVM CP DEFSEG RLMSEGXA 4200-44FF SR 4500-5CFF EW LOADNSHR
HCPNSD440I Saved segment RLMSEGXA was successfully defined in fileid 4180.
+GENEDAVM Loading the Product Support Segment...

DMSLIO201W The following names are undefined:
 #C#EXIT  $FPUTC   FILLB    VIEWRD
@@@@@@ Return code 4 from GENFS1XA before autocall
DMSLIO201W The following names are undefined:
 #C#EXIT  $FPUTC   FILLB    VIEWRD
@@@@@@ Return code 4 from GENFS1XA after autocall
Creating $FOET...
+GENEDAVM Saving the Product Support Segment...
HCPNSS440I Saved segment TRWSEGXA was successfully saved in fileid 4177.
+GENEDAVM Product Support Segment TRWSEGXA Created and saved...
GENLLSEG 07/16/00 16:22:00 V306
HCPNSS440I Saved segment DLLSEGXA was successfully saved in fileid 4179.
GENLLSEG COMPLETED SUCCESSFULLY

Checking whether Segment boundaries have been exceeded...
+GENEDAVM Generation of Product Support Segment completed...

Creating Support EDA EXEC...
DMSXCG517I 1 occurrence(s) changed on 1 line(s)
DMSXCG517I 1 occurrence(s) changed on 1 line(s)
Generating HLI segment and Sink Machine...
Generating HLI named saved segment and modules...
+GENEDAVM Initializing...
Defining the HLI segment...
+GENEDAVM Segment Skeleton Found for HLISEGXA
Loading the HLI Segment...
DMSLIO201W The following names are undefined:
 HBTCLR   HBTCHK   HBTCLO   DNINIT   FILLEXT  DELEXT   COMCTL   XBKATT
 XFNDBK   XDXCTF
@@@@@@ Return code 4 from GENHS1

Creating $HLIET DATA file...
Saving the HLI Segment.
HCPNSS440I Saved segment HLISEGXA was successfully saved in fileid 4178.
Checking whether HLI Segment boundaries have been exceeded...
Creating HLINFO DATA file...
Generation of HLI segment HLISEGXA completed...
HLI module "HLIMAIN" created successfully.
+GENEDAVM Completed...
```

```
+GENEDAVM Copying Product Support Files to Production mini-disk...
=====> Many files copied <=====
+GENEDAVM Product Generation Phase II...
DMSCPY721I Copy EDAMAIN MODULE A1 to EDAMAIN MODULE C1 (new file)
DMSCPY721I Copy FRSP15 MODULE A1 to FRSP15 MODULE C1 (new file)
DMSCPY721I Copy GENLLSEG MODULE A1 to GENLLSEG MODULE C1 (new file)
+GENEDAVM Bypassing LoadLib Segment Generation,
Already Completed During Phase I Generation...
+GENEDAVM Checking Segment Boundaries...
+GENEDAVM Generation of Product Segment completed...
+GENEDAVM Creating EDASTART EXEC...
DMSXCG517I 1 occurrence(s) changed on 1 line(s)
+GENEDAVM Bypassing File Copying To Production minidisk,
Already Completed During Phase I Generation...
+GENEDAVM Completed, ReturnCode 0
Ready; T=38.66/44.
```

Additional font files must be copied from the maintenance disk to the production disk. To accomplish this, issue the following commands:

```
COPY * AFM A = = C (REPL OLDD TYPE

COPY * FOCTMAP A = = C (REPL OLDD TYPE

COPY PSHDR ERRORS A PSHDR ERRORS C (REPL OLDD TYPE

COPY FOCFONT TXT A FOCFONT TXT C (REPL OLDD TYPE
```

Configuring the Server

After you have completed all the installation steps, you are ready to configure the server. The Server Administration manual for VM contains instructions on setting up your server for TCP/IP and data adapters.

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